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AUTHOR Brayfield, April
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ABSTRACT

A study focused on how child care costs may restrict women's employment prospects, in terms of their current employment status and the amount of time they spend in paid work. It compared the effects of four dimensions of child care costs on women's labor supply: market price of care within a local area, amount of money parents spend on child care, women's perceptions of the price of substitute care, and availability of relatives for providing child care. The analysis used the most up-to-date nationally representative data on child care--National Child Care Survey 1990 and A Profile of Child Care Settings Study--in conjunction with a contextual file of county-level information. The sample consisted of 2,241 mothers with a child under age 5 and 1,739 mothers with a child aged 5-12. Logistic regression models estimated how various indicators of price of care, availability of relatives, human capital factors, family characteristics, and local economic and social conditions affected likelihood of women's employment. Tobit analyses evaluated how the same set of explanatory factors influenced the number of hours that women spend in paid work. Findings were as follows: the effects of child care price on women's labor supply were sensitive to measurement of price; women's perceptions about the price of child care were powerful determinants of their labor force participation; and the presence of other adults in the household and availability of relatives encouraged women's employment. (Contains 26 references and 7 companion studies.) (YLB)

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CHILD CARE COSTS AS A BARRIER TO WOMEN'S EMPLOYMENT

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Prepared by:
Dr. April Brayfield
Research Associate
The Urban Institute
For
The Women's Bureau
U.S. Department of Labor
Washington, D.C. 20210

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Emerging Issues & Concerns of the
Current Labor Status of Women
Contract No. J-9-M-1-0072

CHILD CARE COSTS AS A BARRIER TO WOMEN'S EMPLOYMENT

Final Report

September 1992

Submitted to:

Harriett J. Harper, Chief
Statistical and Economic Analysis Division
Women's Bureau
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, D.C. 20210

Prepared by:
Dr. April Brayfield
Research Associate
The Urban Institute
2100 M Street, N.W.
Washington, D.C. 20037
(202) 833-7200

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Executive Summary

Child care is a central U.S. workforce issue in the 1990s because of the increasing number of women with young children, especially single mothers, in the labor force. This report provides information on how child care costs may restrict women's employment prospects, in terms of their current employment status and the amount of time they spend in paid work. This study compares the effects of four dimensions of child care costs on women's labor supply: (1) the market price of care that parents face within a local area; (2) the amount of money that parents spend on child care; (3) women's perceptions of the price of substitute care; and (4) the availability of relatives for providing care.

This study has three unique features. First, this study examines what women *think* about the price of care. Previous studies have ignored the powerful role of perceptions of price in determining women's employment. Some women may forego employment because they think they cannot afford the available care options, regardless of how much it really costs. Second, this study considers multiple measures of child care costs -- parental expenditures as well as average center and family day care fees in the local area. Third, the analysis uses the most up-to-date nationally representative data on child care -- the National Child Care Survey 1990 and A Profile of Child Care Settings Study in conjunction with a contextual file of county-level information. The selected sample consists of 2,241 mothers with a child under age 5 and 1,739 mothers whose youngest child is between 5 and 12 years of age.

The analysis for this report is divided into two parts. First, logistic regression models estimate how various indicators of price of care, availability of relatives, human capital factors, family characteristics, and local economic and social conditions affect the likelihood of women's employment. Afterwards, Tobit analyses evaluate how the same set of explanatory factors influence the number of hours that women spend in paid work.

Findings indicate that the effects of child care price on women's labor supply are sensitive to measurement of price. First, local fees charged by regulated providers do *not* directly affect women's employment decisions. Second, parental expenditures affect women's employment in a *curvilinear* fashion. As predicted weekly expenditures rise, both the likelihood of employment and women's hours in paid work increase initially, but then decline at the apex of $74-77 a week for women with a child under age 5 and at the apex of $50-54 a week for women whose youngest child is aged 5-12. This finding implies that women's labor supply increases when quality care can be obtained at a reasonable price. Both cheap care of questionable quality and expensive care of any quality limit women's employment.

The analyses reveal that women's perceptions about the price of child care are powerful determinants of their labor force participation. The likelihood of employment and women's time spent at their jobs decrease as women's perception of the minimum hourly price increases. Thus, if women perceive the price of child care to be too high, regardless of the actual price, they are more likely to stay at home on a full-time basis.

Women's perceptions may be a more accurate reflection of the true minimum price that they face than fees charged by regulated providers or predicted parental expenditures. If so, public or private financial assistance is a reasonable policy objective. But if women's perceptions of price do not reflect their potential expenditures, educational campaigns about child care options may lessen the negative impact of women's perceptions of price on their employment decisions.

This study also finds that mothers of teenagers do not appear to serve as a pool of potentially "free" caregivers for younger siblings. Yet the presence of other adults in the household, regardless of their gender or employment status, stimulates the labor supply of mothers with preschool-age children. The availability of relatives in the local area also encourages women's employment.

This report provides several insights on the relationship between child care costs and women's labor supply. By far the most important finding is that the cost of care has a *multidimensional* influence on women's employment. What mothers *think* about price matters. Both perceptions of price and child care expenditures affect women's employment status and their hourly commitment to their jobs.

I. Understanding the Problem

Introduction

Today more American women with children are in the labor force than women of previous generations. Throughout the 1980s the labor force participation rates of mothers rose dramatically in the United States. In 1988, 56.1 percent of all women with children under age 6 were in the civilian labor force compared with 46.8 percent in 1980 - an increase of 9 percentage points in only eight years (U.S. Bureau of Labor Statistics, 1989: Table 56). Indeed, 20 million mothers with children under age 18 were employed and another 1.4 million were actively seeking jobs in 1988 (U.S. Bureau of Labor Statistics, 1989: Table 56).

Yet family obligations and the lack of affordable, quality child care restrict women's employment prospects. Children, primarily young children, traditionally have presented an obstacle to women's labor force participation. Employed women with young children typically rely on someone else to care for their children while they are on the job. For many mothers, the financial costs of child care may outweigh the benefits of employment. In fact, almost 24 percent of mothers aged 21 to 29 years old who were not in the labor force in 1986 cited child care problems as the primary reason for not looking for a job (Cattan, 1991). Mothers who are black or hispanic, single, poor, or who lack a high school diploma are especially prone to job market absences because of child care problems (Cattan, 1991).

This report examines how child care costs serve as a barrier to women's labor supply, in terms of their current employment status and the amount of time they spend in paid work.

This study compares the effects of four dimensions of child care costs on women's employment: (1) the market price of care that parents face within a local area; (2) parental expenditures on child care; (3) women's perceptions of the minimum price of substitute care; and (4) the availability of potentially "free" caregivers. Focusing on women with children under age 13, the empirical analyses use two recent nationally representative data sources -- the National Child Care Survey 1990 and A Profile of Child Care Settings Study.

Evidence from Previous Studies

Numerous studies indirectly deal with the issue of child care and women's labor supply by examining child care and employment preferences (Cattan, 1991; Presser and Baldwin, 1980; Sonenstein and Wolf, 1991). Preferences, however, may not accurately predict future behavior. Regardless of a woman's attitude toward work, merely the presence of young children constrains her employment by generating the need for substitute child care. Women with preschool-age children, especially those with infants, are less likely to participate in the labor force and are more likely to work shorter hours because the presence of young children greatly enhances the value of their time spent within the home.

Some economists, however, argue that rising real wages of women and the expansion of female occupations have increased the opportunity cost of foregoing market work and staying home to care for children on a full-time basis (e.g., Mincer, 1962; Oppenheimer, 1970; Calhoun and Espenshade, 1985). Thus, researchers find that a woman's wage rate and level of education influence her labor force participation (e.g., Blau and Robins, 1988, 1989; Leibowitz et al., 1988). Education elevates human capital which, in turn, causes the mother's potential market wage to rise. Although some scholars suggest that home

productivity also rises with education, it seems likely that the value of market time increases more than the value of nonmarket time. Thus, highly educated women and women with higher potential wage rates are more likely to remain in the labor force after childbirth because of the opportunity cost associated with nonmarket, homemaking activities.

In a pioneering paper, Heckman (1974) highlights the importance of the price of child care when a married woman weighs the costs and benefits of participating in the labor force. Higher child care prices lower the mother's effective wage in the labor market, which in turn decreases the probability of labor force participation. If she is already in the labor market, a decreased effective wage lowers the value of an extra hour spent in the market relative to the value of an extra hour spent at home with children. Heckman (1974) suggests that higher child care prices encourage women to substitute family work for market work. Thus, as the price of care increases, the number of hours in paid work decreases.

Unfortunately, Heckman (1974) lacked data on the market price of care to test his hypothesis. Instead, he estimated a price function for informal care by assigning a zero price to mothers who have relatives available for providing informal child care. Because of data limitations, he could not estimate the price of formal child care arrangements. At best, his empirical results provide only indirect evidence that the price of care affects the labor supply of mothers with young children through the availability of sisters, parents, or grandparents as low-cost providers.

Other scholars have attempted to measure the price of child care and its impact on women's employment using different data sources and definitions of child care costs. Three

frequently-cited studies find that the price of care deters married women's labor force participation (Blau and Robins, 1989; Connelly, 1989; Stolzenberg and Waite, 1984).

First, Stolzenberg and Waite (1984) examine the relationship between the cost and availability of child care at the aggregate level and the labor force participation of individual women using 1970 U.S. Census data. They find that higher average earnings of child care workers employed outside private households in the local county are negatively related to married women's employment.

Second, Blau and Robins (1988) provide evidence that child care costs negatively affect married women's employment decisions. Their analysis uses data from two sources - the 1980 Employment Opportunity Pilot Projects conducted in 20 distinct geographical sites across the United States and the 1980 U.S. Census. They define child care cost for each mother in the sample as (1) the average weekly child care expenditure by families using paid care in the local site and (2) the average hourly earnings of child-care workers in the local site. Their results demonstrate that women's employment and child care decisions are sensitive to the market price of care.

Third, Connelly (1989) also examines the effect of child care costs on married women's labor force participation. She uses information on the weekly child care expenditures for employed women from the 1984 Panel of the Survey of Income and Program Participation (SIPP) to predict expenditures for both employed and nonemployed women. She finds that the probability of a married woman participating in the labor force is negatively affected by predicted child care expenditures.

In contrast, Blau and Robins (1991) find that predicted hourly child care costs per child do not directly affect the likelihood of employment for young mothers, regardless of marital status. They suggest that the lack of an expenditure effect on employment may be due to the way child care costs were estimated or to the particular set of explanatory variables in their model. Blau and Robins (1991) corrected the expenditure equation for selectivity on employment status and on positive costs in a manner similar to the procedure used by Connelly (1989). Yet Blau and Robins (1991) included both married and single mothers in their analysis, while Connelly (1989) excluded single mothers.

These previous studies rely on imprecise indicators of the price of care that parents face in their local area. They have either defined actual price in terms of predicted child care costs (Blau and Robins, 1991; Connelly, 1989), average parental expenditures (Blau and Robins, 1988), average earnings of child care workers (Stolzenberg and Waite, 1984; Blau and Robins, 1988), or they have assumed the price of relative care to be zero (Heckman, 1974). Even Hofferth and Wissoker (1992), who focus on careful estimation of the price of care, did not have information available on the local price of care. These indicators of price are creative solutions to the problem of unavailable data, but better measures of the actual price of child care may yield different conclusions about women's labor supply.

Prior studies also ignore the powerful role of perception in determining how the price of care affects women's labor supply. Child care costs affect women's decisions about how best to spend their time in terms of what women *think* child care would cost, that is, their perception of price, not just the actual market price of care. Some women may perceive the price of care as being much higher than the actual market price, and thus, they forego

employment, education, or training because they *think* they cannot afford the available child care options.

Many scholars and policy makers alike have assumed that the availability of nonemployed relatives, especially female kin, lowers the opportunity cost of employment for mothers with young children. However, the mere presence of a relative does not automatically translate into a zero-cost alternative. Research shows that some parents pay relatives for care, either in monetary or non-monetary terms (Hofferth et al., 1991). Furthermore, a research note based on 1979-1986 data from the NLSY reports that nonemployed relatives living in the same household negatively affect, and employed relatives positively affect women's decision to work for wages (Parish et al., 1991). This finding supports a "culture of employment" explanation in that women who are surrounded by working family members are encouraged to be employed. Thus, previous assumptions about the relationship between the availability of relatives and women's employment are questionable.

Finally, research demonstrates that other factors, besides child care costs, explain women's labor supply. Both the availability and the level of *alternative sources of income* affect women's labor force participation (Leibowitz et al., 1988; Blau and Robins, 1988; Parish et al., 1991; Carliner et al., 1984). Women with higher family incomes are less likely to work for wages. And women with a greater stock of *human capital* in terms of wage rate, work experience, and education generally have greater employment opportunities, and thus, are more likely to work for wages (Blau and Robins, 1991; Connelly, 1989). Women's *values* toward work and the family play a significant role in their commitment to

market work. Thus, research shows that women's labor force participation varies by cohort, education, race/ethnicity, and occupation (Stier, 1991; Presser and Baldwin, 1980; Oppenheimer, 1982; Leibowitz et al., 1988). Finally, *local labor market conditions*, such as unemployment rates and measures of job convenience, have been linked to individual women's decisions about employment (Stolzenberg and Waite, 1984; Parish et al., 1991). This study controls for the effects of these other factors in examining the relationship between child care costs and women's employment.

II. Empirical Framework

This study focuses on how child care costs independently affect women's labor supply. I characterize women's labor supply in two ways: (1) the likelihood of a woman being employed and (2) the number of hours that a woman is employed on a weekly basis. First, I examine the likelihood of maternal employment by estimating the odds of being employed compared to not being employed (p/1-p). This logistic regression equation takes the following general form:

$$\log \frac{p}{1-p} = \alpha + \beta X \qquad (1)$$

where X represents a vector of actual child care price, perceived price of child care, availability of relatives, and other explanatory factors such as human capital, family characteristics, and local economic and social conditions. The resulting parameter estimates reflect how the log-odds of being employed are affected by a unit change in the corresponding explanatory variable. I estimate a series of logistic regression models to determine how different indicators of price influence the likelihood of maternal employment.

Second, I use a Tobit model to evaluate how the same set of factors explain women's work effort in terms of their hourly commitment to their jobs. Tobit analysis estimates the impacts of these factors on the number of hours spent in paid work while taking into account the fact that not all women in the sample are employed. The expected number of hours worked is estimated by the following equation:

$$Y=X\beta F(z)+\sigma f(z),\ z=\frac{X\beta}{\sigma} \qquad (2)$$

where $F(z)$ is the normal cumulative distribution function and $f(z)$ is the standard normal probability density function. McDonald and Moffitt (1980) provide an excellent description of how to disaggregate the Tobit coefficient into two components of interest: (1) changes in the probability of being employed and (2) changes in the hours worked conditional on employment.

For both the logit and the Tobit models, I analyze mothers with a preschool-age child separately from those whose youngest child is of school age because previous research shows that (a) women's labor force participation rate varies greatly by the age of the youngest child and (b) the care arrangements parents use for younger children are significantly different than for older children (Hofferth et al., 1991). I examine whether the employment decisions of women with older children are less sensitive to the actual or perceived price of care.

III. Data Sources and Sample Selection

This study uses two new national data sets -- A Profile of Child Care Settings Study (PCS) and the National Child Care Survey 1990 (NCCS) -- in conjunction with a file of contextual data on the counties in which these two surveys were administered. These data sets are well suited to the analysis of child care and women's employment issues. Both the NCCS and PCS contain extensive information on the child care arrangements of both employed and nonemployed women, and the NCCS collected additional detailed information on mothers' employment over the past year. The contextual data file supplies information on the local economic and social conditions that women face in making their employment decisions.

PCS Data

A Profile of Child Care Settings Study is a nationally representative survey of regulated and unregulated preschool programs and regulated family day care homes. Computer-assisted telephone interviews were conducted with approximately 2,088 center directors and 583 family day care providers from October 1989 through February 1990. The response rates for the PCS study were quite high; interviews were completed with 89 percent of center directors and 87 percent of the home-based providers eligible for the study. This data set provides detailed information on fees and subsidies as well as general administrative characteristics, admission policies, enrollment size, staffing and other program characteristics (see Kisker et al., 1991). In the present study, I use PCS information on fees charged by centers and by regulated family day care homes.

NCCS Data

The National Child Care Survey 1990 is a nationally representative survey of households with children under age 13. Besides basic demographic information on all household members, this survey collected detailed information on current and previous child care arrangements, child care expenditures, and perceptions of the availability, price, and other characteristics of alternative child care arrangements. This survey also provides detailed data on current and previous employment characteristics, reasons for not working or stopping last job, and employer benefits. The NCCS used the same first stage sampling unit as the PCS - a probability-proportional-to-size sample of 100 counties or groups of counties representative of the United States population, resulting in a total of 144 counties. Using a random-digit-dial technique, 4,392 households were interviewed by phone. The overall response rate was 57 percent. No systematic differences between responding and non-responding households were detected when the results of the NCCS were compared with the 1988 National Health Interview Survey (see Hofferth et al., 1991).

Contextual Data

As part of the PCS and the NCCS, data were obtained for 62 contextual variables in each of the 144 counties using a variety of sources such as the County and City Data Book, the U.S. Bureau of the Census, and the Bureau of Economic Analysis. The contextual file supplies information on the local economic and social conditions that women face in making their employment decisions. The present study uses four constructed factor-based scales and one additional contextual variable from this file.

Sample Selection

For this study, 412 cases were dropped from the original NCCS sample of 4,392 households due to analytic restrictions and missing information. The sample for this project is limited to mothers who are aged 18 to 64, who have at least one child under age 13 living at home, and who are not prevented from being employed due to disability. Missing information on key characteristics of the mother further reduces the sample, arriving at a total of 3,980 eligible mothers for this analysis. Table 1 details the reasons and the number of cases sequentially deleted from the full NCCS sample.

Descriptive statistics and multivariate analyses are weighted to reflect population distributions except where noted. This procedure adjusts sample stratification and ensures that the findings can be generalized to the population of target mothers aged 18 to 64. After fee information from the PCS and contextual data were linked to the eligible NCCS respondents in the corresponding counties, the final sample contains 2,241 mothers with a child under age 5 and 1,739 mothers whose youngest child is between 5 and 12 years of age.

Table 1
Reasons for deleting cases from the National Child Care Survey (NCCS)

Reasons	Additional Cases Deleted	Resulting Sample Size
Full NCCS sample	0	4392
Age of youngest child unknown	16	4376
Mother not present in household	134	4242
Age of mother not in range 18-64	52	4190
Disabled mother/employment status unknown	56	4134
Education of mother unknown	12	4122
Marital/partner status unknown	9	4113
Information on youngest child unknown	117	3996
Number of children aged 13-17 unknown	2	3994
Number of children under age 13 unknown	3	3991
Availability of relative care unknown	11	3980

Note: Reasons are listed in order of sequential sample selection.

IV. Variables and Measurement

This study focuses on how the cost of child care influences women's labor supply, while controlling for three other categories of explanatory variables: (1) human capital factors; (2) family characteristics; and (3) local economic and social conditions. Table 2 summarizes the definitions of these variables and Figure 1 organizes the variables into a general model.

Labor Supply

Labor supply is characterized by two dependent variables in this study: (1) the probability of a woman being employed in the week prior to the interview and (2) the number of paid hours that a woman worked during this prior week.

In this sample, 55 percent of the women with a preschool-age child and 72 percent of women whose youngest child is of school age were employed. These percentages approximate population estimates from the Current Population Survey. The *Handbook of Labor Statistics* reports that 56 percent of women with children under age 6 and 73 percent of women with children aged 6 to 17 were in the civilian labor force in 1988 (U.S. Bureau of Labor Statistics, 1989: Table 56).

Among employed respondents, 69 percent of women with a child under age 5 and 65 percent of women whose youngest child is aged 5 to 12 worked a full-time schedule (i.e., 35 hours or more). Using a different breakdown by age of youngest child, the *Handbook of Labor Statistics* reports that 69 percent of women with children under age 6 and 75 percent

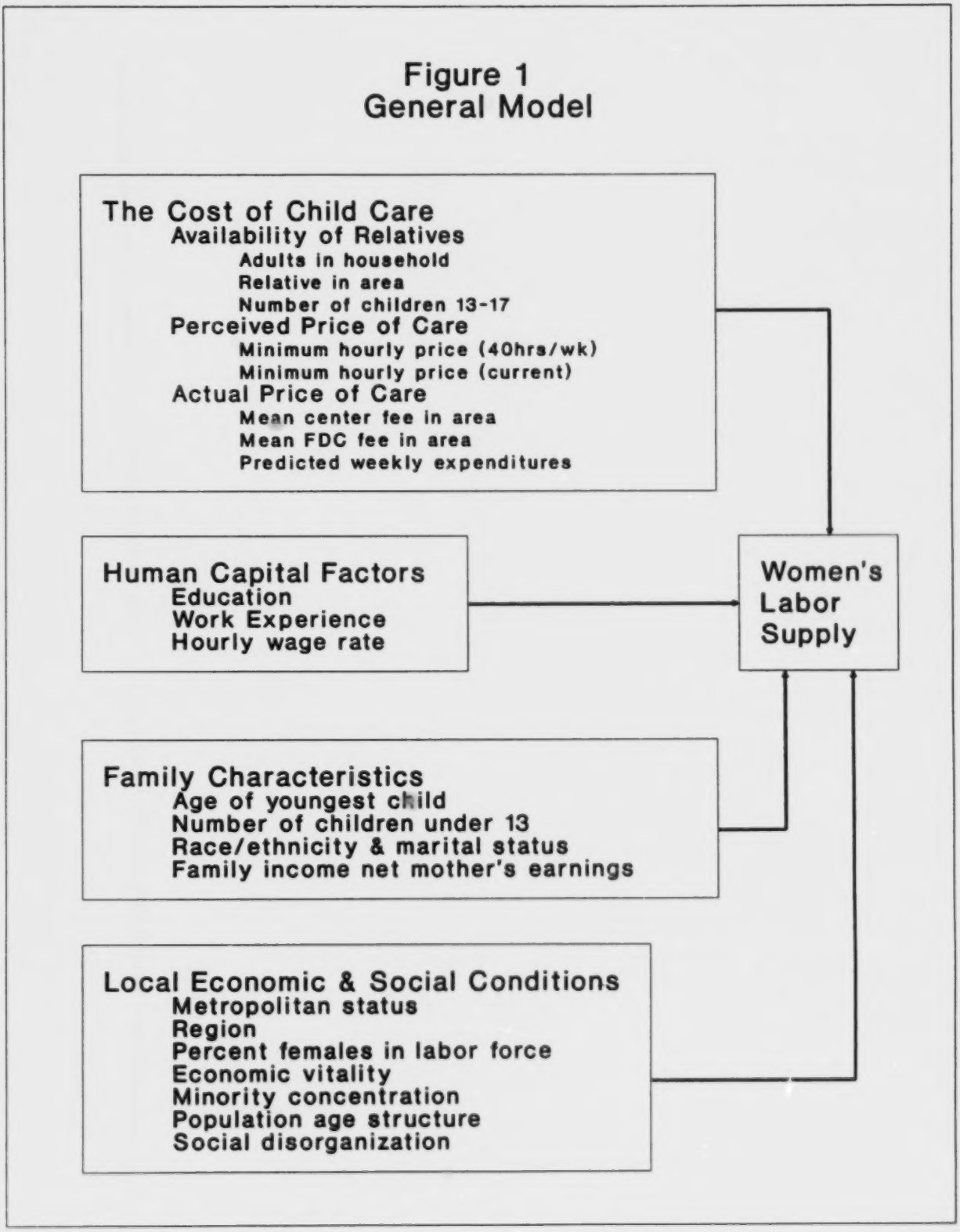
Table 2
Variable Definitions

Variable Name	Variable Definition
Labor Supply	
Employed	1 if employed during previous week, 0 otherwise
Hours in paid work	Number of hours working for pay during previous week
The Cost of Child Care	
Availability of Relatives:	
Presence of oher adults, but no employed female	1 if at least one other nonparental adult resides in the household, but none of these adults is an employed female, 0 otherwise
Presence of other adults with employed female	1 if at least one other nonparental adult who is an employed female resides in the household, 0 otherwise
(omitted)	No other nonparental adult in household is reference category
Relative available in local area	1 if relative is available in local area, 0 otherwise
Number of children aged 13-17 in household	Number of children aged 13-17 living in household
Perceived Price of Care:	
Perceived minimum hourly price (40hrs/wk)	Minimum perceived hourly price based on 40 hours of per week
Perceived minimum hourly price (current hours)	Minimum perceived hourly price based on youngest child's current hours per week in primary arrangement
Actual Price of Care:	
Mean center fee in local area	Mean fee charged by centers within primary sampling unit (PSU)
Mean FDC fee in local area	Mean fee charged by regulated family day care providers within PSU
Predicted weekly expenditures	Predicted weekly expenditures spent on care of all children in family
Human Capital Factors	
Years of education	Number of years of education completed
Years of work experience	Number of years employed since age 18
Predicted hourly wage rate	Predicted wage per hour

Table 2 continued
Variable Definitions

Variable Name	Variable Definition
Family Characteristics	
Age of Youngest Child:	
Youngest child aged 1-2	1 if youngest child aged 1-2, 0 otherwise
Youngest child aged 3-4	1 if youngest child aged 3-4, 0 otherwise
(omitted for mothers with a child under age 5)	Youngest child under age 1 is reference category
Youngest child aged 6-9	1 if youngest child aged 6-9, 0 otherwise
Youngest child aged 10-12	1 if youngest child aged 10-12, 0 otherwise
(omitted for mothers with youngest aged 5-12)	Youngest child 5 years old is reference category
Number of children under age 13	Number of children under age 13 residing in the household
Intersection of race/ethnicity and marital status:	
Single & Black	1 if single mother who is African American, 0 otherwise
Single & Other race	1 if single mother who is other non-white race/ethnicity, 0 otherwise
Single & White	1 if single mother who is Anglo American, 0 otherwise
Married/partner & Black	1 if married mother or living with partner and is African American, 0 otherwise
Married/partner & Other race	1 if married mother or living with partner and is other nonwhite race, 0 otherwise
(omitted)	Married mother or living with partner and is Anglo American is reference category
Family income net mother's earnings	Annual 1988 family income minus mother's annual earnings
Local economic and social conditions	
Metropolitan status:	
Suburban	1 if resides in suburban area, 0 otherwise
Rural	1 if resides in rural area, 0 otherwise
(omitted)	Central city is reference category
Region of residence:	
Midwest	1 if resides in Midwest, 0 otherwise
Northeast	1 if resides in Northeast, 0 otherwise
West	1 if resides in West, 0 otherwise
(omitted)	South is reference category
Percent females in labor force	Percentage of females in the civilian labor force in county, 1980
Economic vitality scale	Factor-based scale measuring economic health of county
Minority concentration scale	Factor-based scale measuring issues related to minority representation in county
Population age structure scale	Factor-based scale measuring the demographic characteristics of county
Social disorganization scale	Factor-based scale measuring the social cohesiveness of county

Figure 1
General Model



of women with children aged 6 to 17 worked a full-time weekly schedule in 1988 (U.S. Bureau of Labor Statistics, 1989: Table 56).

Cost of Child Care

Measuring the cost of child care consists of three components: (1) the availability of potentially free caregivers; (2) the perceived price of care; and (3) the actual price of care.

Availability of relatives. Three variables measure the availability of relatives for providing potentially "free" child care:

- the presence of other nonparental adults in household by their employment status;
- whether a relative is available for child care in the local area; and
- the number of children aged 13 to 17 in the household.

The first variable indicates whether or not a nonparental adult is present in the household and, if so, whether one of the "extra" adults is an employed female. I have constructed three possible categories: (1) no other nonparental adult resides in the household; (2) at least one other nonparental adult resides in the household, but none of these adults is an employed female; and (3) at least one other nonparental adult who is an employed women resides in the household. The first possibility - no other adults - serves as the reference category. This variable tests the "culture of employment" hypothesis; a positive coefficient for the presence of an "extra" employed female on women's labor supply would support this hypothesis. In this sample, only 2 percent of the mothers with a child under age 5 and 3 percent of the mothers whose youngest child is aged 5 to 12 have an employed women residing in the household (Table 3). About 94 percent of the mothers with young children

and 90 percent of the mothers with school-age children have no other nonparental adult living with them.

Although very few nonparental adults are available for caring for children in the immediate household, about 50% of the mothers in this sample report that they have relatives living in the local area who could provide child care services (Table 3).

The number of children aged 13 to 17 indicates the potential availability of teenagers for providing sibling care for younger brothers and sisters. Only 11 percent of mothers with a preschool-age child have at least one other child between the ages of 13 and 17 living at home, but 37 percent of mothers whose youngest child is aged 5 to 13 have another child aged 13 to 17 living at home.

Perceived price of care. The perceived price of care is defined as the minimum price that mothers *think* is available to them. Among nonusers of particular child care arrangements, NCCS respondents were asked if that form of care was available and how much they thought it would cost. The minimum price across the available arrangements serves as the cheapest possible perceived price of child care for each respondent. If respondents were paying for care and their current expenditure was lower than their perception of the cost of alternative arrangements, then their current expenditure represents the minimum perceived price.

Because respondents gave their price estimates in various units -- hourly, weekly, bimonthly, monthly, or yearly -- I used two alternative methods to convert the perceived

Table 3
Weighted means and standard deviations for explanatory variables by age of youngest child

Explanatory Variables	Under Age 5 (N=2241)		Aged 5 to 12 (N=1739)	
	Mean	S.D.	Mean	S.D.
Predicted weekly expenditure	17.36	18.61	12.31	13.25
Mean fee for centers in local area	1.59	.47	1.54	.45
Mean fee for regulated FDC in local area	1.46	.43	1.45	.43
FDC fee missing	.15	.36	.14	.35
Perceived minimum price per hour (40 hrs/wk)	1.51	.97	1.38	1.35
Minimum price 40 hrs/wk missing	.06	.23	.09	.30
Perceived minimum price per hour (current hrs/wk)	2.41	3.99	4.48	8.78
Minimum price current hrs/wk missing	.07	.25	.11	.32
Presence of other adults, but no employed female	.04	.20	.07	.26
Presence of other adults with employed female	.02	.14	.03	.17
Presence of relatives available for care in area	.49	.50	.49	.50
Number of children aged 13-17 in household	.17	.53	.52	.78
Number of children under age 13 in household	1.89	.89	1.55	.71
Youngest child aged 1-2	.42	.49	-	-
Youngest child aged 3-4	.32	.47	-	-
Youngest child aged 6-9	-	-	.56	.50
Youngest child aged 10-12	-	-	.29	.45
Single & Black	.06	.23	.08	.27
Single & Other race	.03	.16	.02	.14
Single & White	.08	.27	.12	.32
Married/partner & Black	.07	.26	.05	.23
Married/partner & Other race	.09	.29	.08	.27
Years of education	13.23	2.36	13.24	2.27
Predicted hourly wage rate	3.51	1.96	3.89	2.03
Years of actual work experience since age 18	8.51	5.86	11.97	7.12
Annual family income net mother's earnings/1,000	28.40	25.05	28.46	25.78
Income missing	.17	.37	.17	.38

Table 3 continued
Weighted means and standard deviations for explanatory variables by age of youngest child

Explanatory Variables	Under Age 5 (N=2241)		Aged 5 to 12 (N=1739)	
	Mean	S.D.	Mean	S.D.
Suburban	.33	.47	.36	.48
Rural	.24	.43	.29	.45
Midwest	.24	.43	.25	.43
Northeast	.20	.40	.19	.40
West	.22	.42	.19	.39
Percent females in civilian labor force in county, 1980	50.23	6.38	49.97	6.54
Economic vitality county scale	.24	.86	.14	.89
Minority concentration county scale	.14	.88	.11	.88
Population age structure county scale	.05	.97	.06	.94
Social disorganization county scale	.12	.88	.08	.91

minimum price of care to a standard unit of measurement (see Hofferth et al., 1991). The first method assumes that the respondent's perception of price is based on 40 hours of care per week. The second method relies on the youngest child's actual hours in his/her primary care arrangement in the week prior to the interview. The first method may *underestimate* the hourly price of care because not all respondents would want a total of 40 hours of care. The second method may *overestimate* the hourly price of care because mothers who are not currently employed tend to use fewer hours of substitute care.

According to the first method, the average minimum perceived price is $1.51 an hour for mothers with young children and $1.38 for mothers whose youngest child is aged 5 to 12 (Table 3). According to the second method, the average minimum perceived price is $2.41 an hour for mothers with young children and $4.48 for mothers whose youngest child is aged 5 to 12.

Actual price of care. Two different types of variables measure the actual price of care -- fees charged by providers (PCS data) and parental expenditures (NCCS data).

The average fee charged by centers and the average fee charged by regulated family day care homes within each primary sampling unit (i.e., 100 counties or groups of counties) indicate the typical formal market prices in the local area. Some NCCS respondents reside in primary sampling areas in which the fee data for regulated family day care homes is missing. In these cases, I substituted the overall mean fee for the missing value. A dummy variable indicates whether or not the family day care fee was missing for that respondent.

Predicted parental expenditures serve as an alternative measure of actual price of care. Because only those mothers currently purchasing care have expenditure data, I used a Tobit model correcting for the selectivity of using supplemental care to predict expenditures for the entire sample.[1] Tobit analysis assumes that a zero value is a meaningful expenditure. Many mothers rely on free supplemental care for their children. For example, mothers may use relatives or subsidized center care. Therefore, 'zero' is an actual price faced by some mothers.

The expenditure equation takes the following form:

$$\ln E = X\beta F(z) + \sigma f(z) + S \tag{3}$$

where *lnE* is the logged weekly parental expenditures for all children in the family, *X* is a vector of individual, family, and geographic characteristics, and *S* is a sample selection correction term for using supplemental care (see McDonald and Moffitt, 1980). The complete Tobit estimates are presented in the appendix Table A1.

The mean predicted weekly expenditure is $17.36 for mothers with a child under age 5 and $12.31 for mothers whose youngest child is age 5 to 12 (Table 3). These means are

[1] The joint estimation procedure attempts to correct for the fact that the mothers who are currently using substitute care pay more than those who are not using an alternative arrangement. To predict expenditures for those who are not currently using supplemental care, differences between mothers who use nonparental care and mothers who do not use substitute care need to be taken into account.

lower than the average expenditures reported by Hofferth et al. (1991) because I treat zero as a legitimate price, while most studies compute means based on positive expenditures.

Human Capital Factors

In this study, three variables represent the respondent's stock of human capital: (1) years of education; (2) work experience; and (3) predicted wage per hour.

The mean number of years of education for women in the sample is 13, regardless of the age of the youngest child (Table 3).

The number of years that the respondent worked since age 18 represents actual work experience. Women are more likely than men to have interrupted work histories because of child bearing and rearing. Thus, female respondents with a child under age 5 have worked 8.5 years since age 18 on average, although their potential years of work experience would average 10.6 years. Similarly, female respondents whose youngest child is aged 5 to 12 have worked about 12 years since age 18 on average. Yet their mean number of potential years is almost 17.

A woman's wage rate is a crude indicator of her stock of human capital. Because wages are not observed for nonemployed women, a predicted wage rate for all women was derived using information on employed women. The wage equation takes the following form:

$$\ln W=\alpha+\beta X+S \quad (4)$$

where X is a vector of individual and geographic characteristics, and S is a sample selection correction term.[2] I estimated this two-stage model separately for single women and women living with a husband/partner. The full wage equation coefficients are presented in the appendix Table A2.

Family Characteristics

In this study, family characteristics include age of the youngest child, number of children under age 13 in the family, the intersection of race/ethnicity with marital/partner status, and gross annual family income net of mother's earnings.

Among mothers with a child under age 5 in the sample, 26 percent have an infant, 42 have a youngest child aged 1 to 2, and 32 percent have a youngest child aged 3 to 4 (Table 3). Among mothers whose youngest child is aged 5 to 12 in the sample, 15 percent have a five-year-old child, 56 percent have a youngest child between the ages of 6 and 9, and 29 percent have a youngest child between the ages of 10 and 12. The mean number of children

[2] The two-step procedure attempts to correct for the possibility that the individuals who are employed earn higher wages than would be earned by those who are not currently employed. To predict wages for those who are not currently employed, differences between the employed and the nonemployed samples need to be taken into account. Following Heckman, I first estimated a model of the probability of employment and then used a transformation of the predicted probability of employment as a regressor in the OLS regression model of wages. Berk (1983) and Berndt (1991) both provide descriptions of this methodology, and Blau and Robbins (1991) use this procedure to estimate wage rates in a recent study on child care demand and female labor supply.

under age 13 is about 2 for mothers with a child under age 5 and about 1.5 for mothers whose youngest child is aged 5 to 12.

To control for and examine the joint effects of particular family structures and race/ethnicity, I constructed a set of dummy variables that measure this intersection. The six categories for this analysis are: (1) African-American mother who is single; (2) Anglo-American mother who is single; (3) single mother who is neither black nor white; (4) African-American mother who is married or living with a partner; (5) Anglo-American mother who is married or living with a partner; and (6) a married/partner mother who is neither black nor white. Anglo-American, married mothers serve as the reference group; 67 percent of the mothers with a preschool-age child and 65 percent of the mothers whose youngest child is of school age fall into this category. Table 3 details the sample proportions for the other groups.

The mean annual family income net of mother's earnings for those with younger or older children is approximately $28,000. About 17 percent of all respondents did not report their family income or the mother's earnings. Across all surveys, respondents tend to be reluctant to report earnings and income information. I substituted the mean value for missing values, and a dummy variable controls for whether the income information was missing. This common technique prevents a further reduction in sample size.

Local Economic and Social Conditions

Previous research shows that the fees charged by child care providers vary substantially by local conditions (Kisker et al., 1991). Moreover, women's opportunities for

employment rely on the dynamics and structure of the local labor market. This study controls for the impact of several aspects of communities on women's employment: (1) metropolitan status; (2) region of residence; (3) percentage of females in the civilian labor force in the county; and (4) four factor-based scales that characterize the local economic and social conditions of the county of residence.

For the PCS report, Brayfield and Hofferth (1991) reduced the original 62 variables in the contextual file to a set of 15, using factor analysis. They discovered four underlying factors: (1) economic vitality; (2) minority concentration; (3) population age structure; and (4) social disorganization. Based on the results of this equation, Brayfield and Hofferth (1991) constructed four factor-based scales to represent the local economic, social, and cultural conditions faced by the households in the NCCS sample.

The economic vitality scale is based on economic characteristics of the county -- median home value, mean earnings per job, median household income, and percentage of county residents with 12 years or more of formal education. The minority concentration scale represents high factor loadings on the infant mortality rate for nonwhites, the percentage of low birth weight babies, the percentage of nonwhites, and the percentage of teen births in the county. The population age structure scale characterizes the youthfulness of the county residents. The social organization scale is based on the percentage of religious adherents, the civilian unemployment rate, and the divorce rate in the county. Refer to Brayfield and Hofferth (1991) for a complete description of the creation of these variables. Table 3 details the means and standard deviations of these scales for this sample.

One other variable from the contextual file was extracted for this analysis -- the percentage of females in the civilian labor force in 1980. The mean female labor force participation rate across the mothers in this sample is about 50 percent (Table 3).

Two variables from the NCCS survey characterize the local living conditions of the respondents: region of residence and metropolitan status. Region of residence corresponds to the four broad U.S. Census regions - Northeast, South, Midwest, and West. South serves as the reference region. Metropolitan status describes the respondent's county residence in terms of the degree of urbanization: central city, other metropolitan/suburban, and nonmetropolitan/rural. Central city is the reference category. Table 3 presents the sample proportions for these dummy variables.

V. Research Findings

I present the research findings in two parts. The first section evaluates several models of women's current employment status, using logistic regression analysis. The second section examines a single model of women's hourly commitment to their jobs, using Tobit analysis.

Predicting Maternal Employment Status

Seven logistic regression models for women with a child under age 5 and for women whose youngest child is between the ages of 5 and 12 indicate that the cost of child care has a multidimensional influence on maternal employment status. I estimated the effects of the different measures of actual and perceived price by initially entering each measure into separate equations, controlling for availability of relatives, family characteristics, human capital factors, and local conditions (Tables 4 & 5: Equations 1-5). Then I estimated two final equations controlling for both parental expenditures and perceived price concurrently (Tables 4 & 5: Equations 6-7). I describe the independent effects of actual price of care, perceived price of care, relative availability, family characteristics, human capital factors, and local social and economic conditions below.

Actual price of care. The effects of actual price on maternal employment status vary by the definition of price. Although local hourly fees do *not* significantly affect women's labor supply, predicted weekly parental expenditures have a *curvilinear* effect on the likelihood of whether women are currently employed.

Table 4
Logit coefficients for equations predicting employment for mothers whose youngest child is under age 5, N=2241
(Standard errors in parentheses)

Explanatory Variables	1	2	3	4	5	6	7
-2 Log Likelihood	944.722	747.721	755.938	772.282	775.141	960.273	975.968
Intercept	-2.8031	-4.5839	-3.6527	-3.5324	-4.0513	-2.1964	-2.4649
Predicted weekly expenditures	.0910*** (.0080)					.0889*** (.0081)	.0929*** (.0081)
Predicted weekly expenditures squared	-.0006*** (.0001)					-.0006*** (.0001)	-.0006*** (.0001)
Mean center fee in local area		.3196 (.6350)					
Mean center fee in local area squared		-.0553 (.1479)					
Mean FDC fee in local area			.0444 (.6498)				
Mean FDC fee in local area squared			.0009 (.1735)				
FDC fee missing			-.4570** (.1607)				
Perceived minimum hourly price (40hrs/wk)				-.2229*** (.0582)		-.1669** (.0601)	
Minimum price (40hrs/wk) missing				-.7280** (.2392)		-.6718** (.2466)	
Perceived minimum hourly price (current hours)					-.0967*** (.0214)		-.1037*** (.0220)
Minimum price (current hrs) missing					-.2140 (.2103)		-.3182 (.2197)

*** p<.001, ** p<.01, * p<.05

Table 4 continued
Logit coefficients for equations predicting employment for mothers whose youngest child is under age 5, N=2241
(Standard errors in parentheses)

Explanatory Variables	1	2	3	4	5	6	7
Presence of other adults, but no employed female	.6723* (.2908)	.7018* (.2780)	.6814* (.2773)	.7165* (.2820)	.6871* (.2787)	.6823* (.2926)	.6504* (.2916)
Presence of other adults with employed female	.9678* (.4416)	1.1299** (.4352)	1.1715** (.4413)	1.1235** (.4363)	1.0919* (.4329)	.9397* (.4427)	.9013* (.4412)
Presence of relatives available for care in area	.2895** (.1105)	.2363* (.1045)	.2336* (.1050)	.2660* (.1054)	.2503* (.1054)	.3063** (.1110)	.3128** (.1117)
Number of children aged 13-17 in household	-.6453*** (.1233)	-.1227 (.1019)	-.1196 (.1016)	-.0994 (.1029)	-.1220 (.1025)	-.6244*** (.1245)	-.6565*** (.1244)
Number of children under age 13 in household	-.6604*** (.0699)	-.2631*** (.0598)	-.2678*** (.0598)	-.2781*** (.0601)	-.2585*** (.0602)	-.6662*** (.0702)	-.6581*** (.0703)
Youngest child aged 1-2	.4489*** (.1321)	.5631*** (.1262)	.5713*** (.1265)	.5436*** (.1269)	.5446*** (.1272)	.4414*** (.1328)	.4321** (.1335)
Youngest child aged 3-4	.5386*** (.1460)	.8494*** (.1377)	.8429*** (.1378)	.7898*** (.1389)	.8123*** (.1381)	.5004*** (.1473)	.4976*** (.1471)
Single & Black	-.9707** (.3543)	-.8786** (.3388)	-.9125** (.3412)	-1.0772** (.3424)	-.9804** (.3400)	-1.1270** (.3584)	-1.0977** (.3567)
Single & Other race	-1.2495** (.4535)	-.9797* (.4225)	-.9885* (.4231)	-1.0908* (.4246)	-1.0417* (.4224)	-1.3426** (.4529)	-1.3595** (.4530)
Single & White	-.4982 (.3097)	-.3984 (.3003)	-.3971 (.3009)	-.5088 (.3035)	-.4674 (.3028)	-.5897 (.3130)	-.5946 (.3130)
Married/partner & Black	.2374 (.2310)	.2649 (.2187)	.2412 (.2191)	.2337 (.2203)	.2609 (.2196)	.2301 (.2327)	.2478 (.2330)
Married/partner & Other race	.2250 (.2013)	.1931 (.1902)	.2008 (.1906)	.2125 (.1935)	.2663 (.1946)	.2553 (.2045)	.3138 (.2071)
Years of education	.0145 (.0348)	.1040** (.0333)	.1025** (.0334)	.0925** (.0340)	.1002** (.0338)	.0049 (.0357)	.0090 (.0357)
Predicted hourly wage rate	.0303 (.0648)	.0748 (.0620)	.0765 (.0621)	.1008 (.0628)	.0885 (.0624)	.0527 (.0656)	.0487 (.0655)

*** p<.001, ** p<.01, * p<.05

Table 4 continued
Logit coefficients for equations predicting employment for mothers whose youngest child is under age 5, N=2241
(Standard errors in parentheses)

Explanatory Variables	1	2	3	4	5	6	7
Years of work experience	.2811***	.2948*	.2962*	.2863*	.2916***	.2742***	.2740***
	(.0281)	(.0269)	(.0269)	(.0272)	(.0270)	(.0284)	(.0285)
Years of work experience squared/10	-.6216*	-.6925*	-.6992*	-.6692*	-.6906***	-.6023***	-.6063***
	(.1106)	(.1055)	(.1056)	(.1070)	(.1059)	(.1118)	(.1116)
Family income net mother's earnings/1,000	-.0442***	-.0351***	-.0352***	-.0341***	-.0338***	-.0436***	-.0434***
	(.0034)	(.0032)	(.0032)	(.0032)	(.0032)	(.0034)	(.0034)
Family income missing	1.1783***	1.0051***	1.0012***	1.0746***	1.0098***	1.2338***	1.1923***
	(.1587)	(.1508)	(.1511)	(.1534)	(.1516)	(.1609)	(.1598)
Suburban	-.2193	-.2684	-.2686	-.2920*	-.3005*	-.2195	-.2399
	(.1503)	(.1468)	(.1429)	(.1428)	(.1432)	(.1506)	(.1515)
Rural	-.1092	-.2293	-.3305	-.2400	-.2669	-.1088	-.1396
	(.2161)	(.2091)	(.2095)	(.2071)	(.2078)	(.2163)	(.2174)
Midwest	-.4616*	-.6039**	-.6049***	-.5630**	-.5754***	-.4679*	-.5042**
	(.1836)	(.1922)	(.1754)	(.1739)	(.1740)	(.1843)	(.1851)
Northeast	-.5367*	-.7888**	-.8219***	-.6411**	-.6024**	-.4927*	-.4324
	(.2240)	(.2509)	(.2219)	(.2140)	(.2154)	(.2253)	(.2275)
West	-.3914	-.4783*	-.5811**	-.4400*	-.4736*	-.3886	-.4456*
	(.2100)	(.2144)	(.2093)	(.2015)	(.2021)	(.2113)	(.2129)
Percent females in labor force	.0468***	.0499***	.0399**	.0449***	.0504***	.0423***	.0459***
	(.0125)	(.0120)	(.0127)	(.0120)	(.0120)	(.0126)	(.0126)
Economic vitality scale	-.2446*	-.3012**	-.2581*	-.1999	-.2596*	-.1873	-.2236
	(.1163)	(.1210)	(.1237)	(.1135)	(.1124)	(.1180)	(.1170)
Minority concentration scale	-.1134	-.1458	-.1245	-.1397	-.1522	-.1045	-.1213
	(.0910)	(.0871)	(.0881)	(.0875)	(.0874)	(.0914)	(.0918)
Population age structure scale	-.0995	-.1089	-.1193*	-.1201*	-.1160	-.1116	-.1046
	(.0631)	(.0605)	(.0608)	(.0608)	(.0608)	(.0636)	(.0638)
Social disorganization scale	-.1181	-.1276	-.1192	-.1338	-.1130	-.1220	-.1038
	(.0935)	(.0880)	(.0880)	(.0882)	(.0893)	(.0938)	(.0952)

*** p<.001, ** p<.01, * p<.05

Table 5
Logit coefficients for equations predicting employment for mothers whose youngest child is aged 5 to 12, N=1739
(Standard errors in parentheses)

Explanatory Variables	1	2	3	4	5	6	7
-2 Log Likelihood	569.393	519.517	522.325	540.645	540.526	585.678	597.539
Intercept	-2.8326	-3.6915	-4.9107	-3.0413	-3.0850	-2.4760	-2.3949
Predicted weekly expenditures	.0859*** (.0141)					.0813*** (.0141)	.0936*** (.0145)
Predicted weekly expenditures squared	-.0008*** (.0002)					-.0008*** (.0002)	-.0009*** (.0002)
Mean center fee in local area		.4577 (.8233)					
Mean center fee in local area squared		-.1659 (.2043)					
Mean FDC fee in local area			1.2084 (.8355)				
Mean FDC fee in local area squared			-.3399 (.2281)				
FDC fee missing			.1912 (.2169)				
Perceived minimum hourly price (40hrs/wk)				-.1228* (.0451)		-.1054* (.0440)	
Minimum price (40hrs/wk) missing				-.8590*** (.2172)		-.7496*** (.2201)	
Perceived minimum hourly price (current hours)					-.0255** (.0083)		-.0338*** (.0085)
Minimum price (current hrs) missing					-.7386*** (.2011)		-.7496*** (.2061)

*** p<.001, ** p<.01, * p<.05

Table 5 continued
Logit coefficients for equations predicting employment for mothers whose youngest child is aged 5 to 12, N=1739
(Standard errors in parentheses)

Explanatory Variables	1	2	3	4	5	6	7
Presence of other adults, but no employed female	-.3926 (.2647)	-.2813 (.2620)	-.3013 (.2632)	-.2466 (.2634)	-.2104 (.2632)	-.3430 (.2651)	-.3191 (.2642)
Presence of other adults with employed female	-.0126 (.4283)	.1660 (.4235)	.1682 (.4244)	.4166 (.4468)	.3174 (.4433)	.2334 (.4484)	.1694 (.4520)
Presence of relatives available for care in area	.1747 (.1368)	.1445 (.2803)	.1473 (.1341)	.1412 (.1350)	.1470 (.1349)	.1683 (.1379)	.1763 (.1385)
Number of children aged 13-17 in household	-.3408** (.1048)	-.0146 (.0865)	-.0152 (.0869)	-.0004 (.0871)	.0154 (.0872)	-.3093** (.1054)	-.3282** (.1061)
Number of children under age 13 in household	-.3727*** (.1099)	-.0615 (.0963)	-.0546 (.0964)	-.0573 (.0972)	-.0413 (.0976)	-.3558** (.1108)	-.3700*** (.1115)
Youngest child aged 6-9	.6993*** (.1851)	.4429* (.1758)	.4536** (.1759)	.4768** (.1766)	.5042** (.1775)	.7113*** (.1859)	.7865*** (.1887)
Youngest child aged 10-12	.7242** (.2239)	.3395 (.2133)	.3373 (.2131)	.4228* (.2150)	.4251* (.2152)	.7663*** (.2253)	.8406*** (.2279)
Single & Black	-.5130 (.3895)	-.4226 (.3830)	-.4233 (.3847)	-.4817 (.3831)	-.4982 (.3839)	-.5648 (.3891)	-.6603 (.3907)
Single & Other race	.4831 (.6416)	.5527 (.6174)	.5436 (.6233)	.6392 (.6296)	.8275 (.6333)	.5596 (.6533)	.7797 (.6530)
Single & White	-.4356 (.3425)	-.2962 (.3360)	-.2938 (.3359)	-.3616 (.3351)	-.3781 (.3352)	-.4915 (.3400)	-.5296 (.3418)
Married/partner & Black	-.1483 (.3102)	-.2035 (.3029)	-.2093 (.3037)	-.2675 (.3069)	-.2684 (.3054)	-.2084 (.3128)	-.2219 (.3135)
Married/partner & Other race	-.0132 (.2553)	-.0326 (.2479)	-.0397 (.2488)	.0960 (.2555)	.1206 (.2578)	-.1077 (.2629)	.1621 (.2676)
Years of education	.0900 (.0471)	.1551*** (.0455)	.1555*** (.0456)	.1462** (.0459)	.1423** (.0459)	.0842 (.0473)	.0719 (.0473)
Predicted hourly wage rate	-.0180 (.0857)	-.0073 (.0837)	-.0066 (.0838)	.0007 (.0834)	.0021 (.0834)	-.0074 (.0850)	-.0086 (.0850)

*** p<.001, ** p<.01, * p<.05

Table 5 continued
Logit coefficients for equations predicting employment for mothers whose youngest child is aged 5 to 12, N = 1739
(Standard errors in parentheses)

Explanatory Variables	1	2	3	4	5	6	7
Years of work experience	.2951*** (.0303)	.2998*** (.0298)	.3016*** (.0299)	.2943*** (.0300)	.2969*** (.0300)	.2904*** (.0305)	.2924*** (.0306)
Years of work experience squared/10	-.5653*** (.1059)	-.5889*** (.1041)	-.5983*** (.1046)	-.5790*** (.1049)	-.5863*** (.1044)	-.5570*** (.1066)	-.5605*** (.1068)
Family income net mother's earnings/1,000	-.0303*** (.0032)	-.0263*** (.0031)	-.0264*** (.0031)	-.0264*** (.0031)	-.0267*** (.0031)	-.0301*** (.033)	-.0310*** (.0033)
Family income missing	.9292*** (.1982)	.7586*** (.1939)	.7584*** (.1948)	.8762*** (.1986)	.8410*** (.1974)	1.0322*** (.2025)	1.0312*** (.2024)
Suburban	.2782 (.1883)	.2133 (.1933)	.2496 (.1858)	.2563 (.1861)	.2775 (.1861)	.2937 (.1894)	.3206 (.1901)
Rural	.5776** (.2694)	.4896 (.2712)	.5809* (.2727)	.5478* (.2657)	.5315* (.2662)	.6326* (.2711)	.6314* (.2725)
Midwest	-.2630 (.2215)	-.2063 (.2385)	-.1671 (.2205)	-.2394 (.2203)	-.2691 (.2197)	-.3007 (.2229)	-.3632 (.2234)
Northeast	.5613 (.2886)	.6009 (.3235)	.5626 (.2941)	.5632* (.2850)	.5499 (.2840)	.5900* (.2905)	.5826* (.2910)
West	.1878 (.2634)	.2123 (.2716)	.2563 (.2662)	.2484 (.2599)	.1866 (.2597)	.1982 (.2654)	.1356 (.2665)
Percent females in labor force	.0063 (.0142)	.0052 (.0140)	.0139 (.0149)	.0030 (.0141)	.0035 (.0141)	.0038 (.0143)	.0038 (.0144)
Economic vitality scale	.2212 (.1326)	.2197 (.1404)	.1648 (.1506)	.2399 (.1326)	.2164 (.1319)	.2624 (.1348)	.2478 (.1347)
Minority concentration scale	.2386* (.1153)	.2393* (.1145)	.2351* (.1141)	.2527* (.1142)	.2548* (.1142)	.2497* (.1160)	.2552* (.1166)
Population age structure scale	-.0621 (.0818)	-.0828 (.0797)	-.0867 (.0803)	-.0854 (.0802)	-.0800 (.0798)	-.0693 (.0827)	-.0638 (.0830)
Social disorganization scale	-.0205 (.1047)	-.0488 (.1033)	-.0534 (.1038)	-.0601 (.1039)	-.0450 (.1038)	-.0313 (.1050)	-.0204 (.1054)

*** p<.001, ** p<.01, * p<.05

First, neither the average fee charged by centers nor the average fee of regulated family day care homes appear to influence the labor force participation of mothers (Tables 4 & 5: Equations 2 & 3). This finding does not vary by the age of the youngest child. The effects of hourly fees on maternal employment status are nonexistent for both mothers with a preschool-age child and mothers whose youngest child is of school age.

Yet predicted weekly expenditures independently affect women's labor supply in unexpected ways, even after women's perceptions of price are taken into account (Tables 4 & 5: Equations 1, 6 & 7). The general effect of parental expenditures is similar for both mothers with young children and mothers with older school-age children. As parental expenditures increase, the likelihood of being employed increases at first and then declines. At lower levels of parental expenditures, the cost of child care encourages women's employment. But at some maximum dollar amount, higher child care expenditures discourage mothers from seeking employment. Price effects change from positive to negative at approximately $74 to $77 per week for women with a child under age 5 (Figure 2) and at approximately $50 to $54 per week for women whose youngest child is between 5 and 12 years old (Figure 3).

Perceived price of care. The effects of perceived price on women's labor supply do not vary by the method of calculating price. Both measures of the perceived minimum hourly price of care *negatively* affect the likelihood of maternal employment (Tables 4 & 5: Equations 4 & 5). These negative effects remain after the curvilinear effects of actual price are taken into account (Tables 4 & 5: Equations 6 & 7). The likelihood of employment

Figure 2
Probability of Employment for Mothers with Youngest Child Under 5

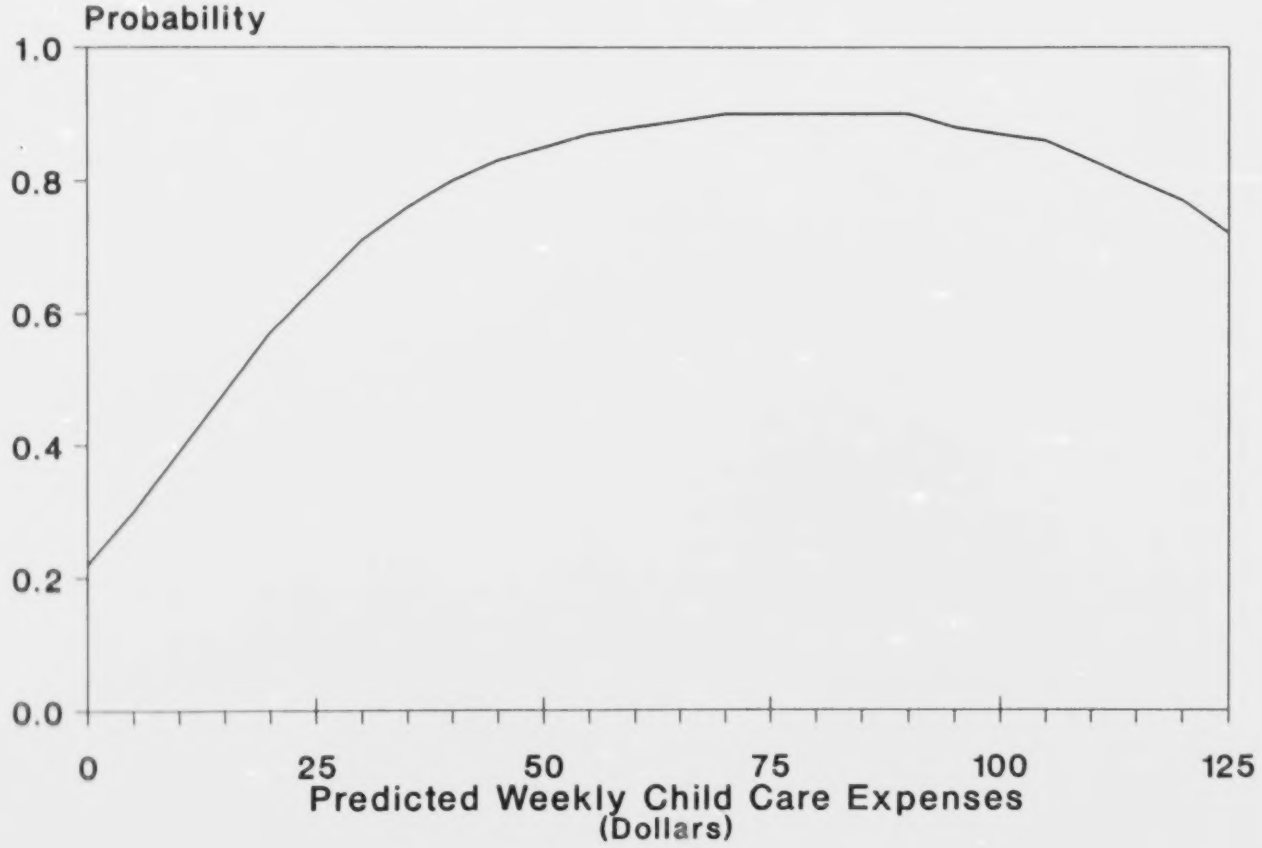
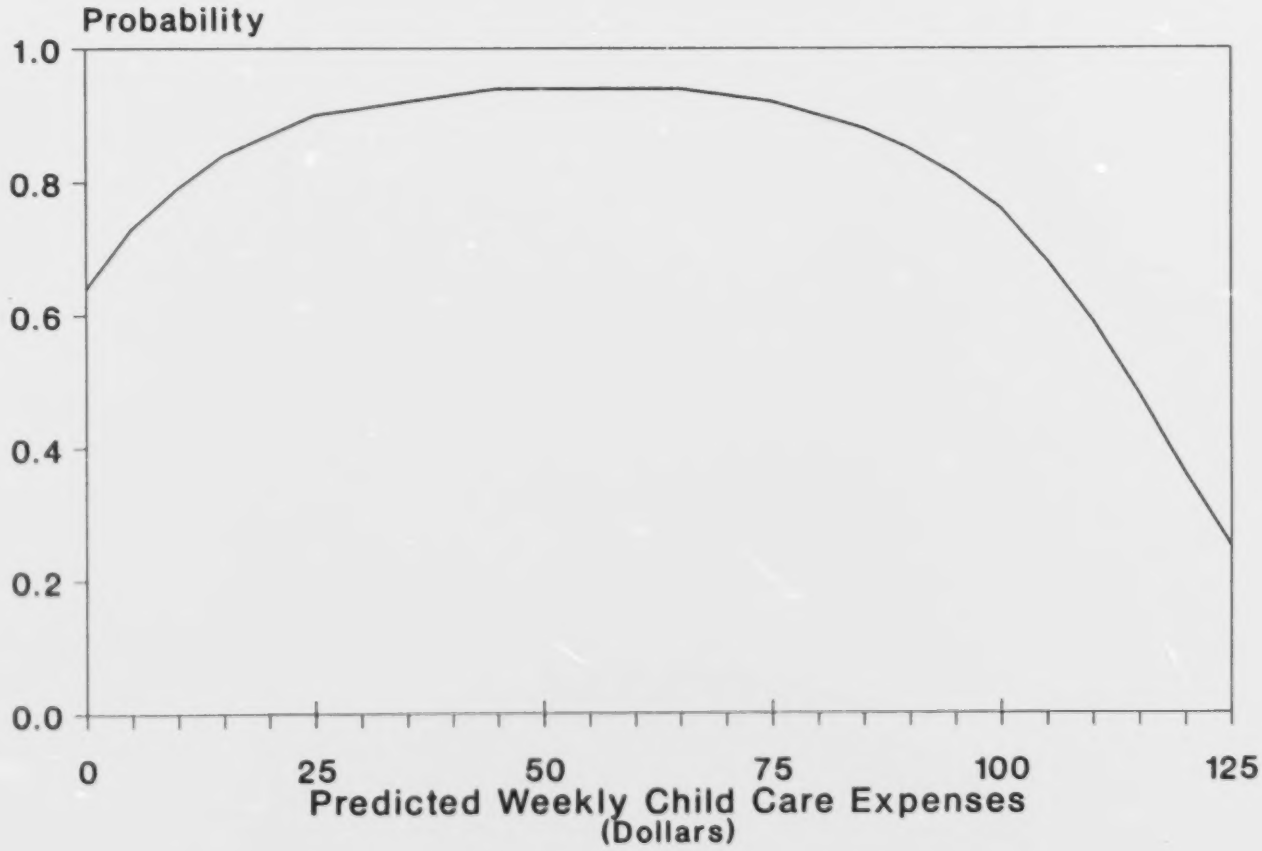


Figure 3
Probability of Employment for Mothers with Youngest Child 5 to 12



diminishes as their perception of the minimum hourly price increases, regardless of the age of the youngest child (Figures 4 & 5).

Availability of relatives. The independent effects of measures of the availability of relatives on maternal employment status vary by age of the youngest child. First, for mothers with a preschool-age child, the likelihood of employment is higher for women living in households with another nonparental adult than for women with no extra family members at home (Table 4). The presence of an "extra" employed female encourages employment among mothers with a preschool-age child in the same way that the presence of any "extra" nonparental adult does. Thus, other adult family members, whether they are employed females or not, simultaneously support a "culture of employment" and provide potential caregiving services. This is not the case for mothers whose youngest child is of school age; the presence of other nonparental adults has no significant effect on their employment (Table 5).

Second, mothers with a child under age 5 are more likely to be employed if a relative is available in the local area (Table 4). However, available relatives do not influence the likelihood of employment for mothers whose youngest child is of school age (Table 5).

In contrast, the number of teenagers at home appears to discourage women's employment regardless of the age of the youngest child (Tables 4 & 5). As the number of children aged 13 to 17 increases, the likelihood of maternal employment decreases. Note that although the number of teenagers has no significant effect across four equations, the final two models indicate statistically significant negative effects (Tables 4 & 5). This

Figure 4
Probability of Employment for Mothers with Youngest Child Under 5

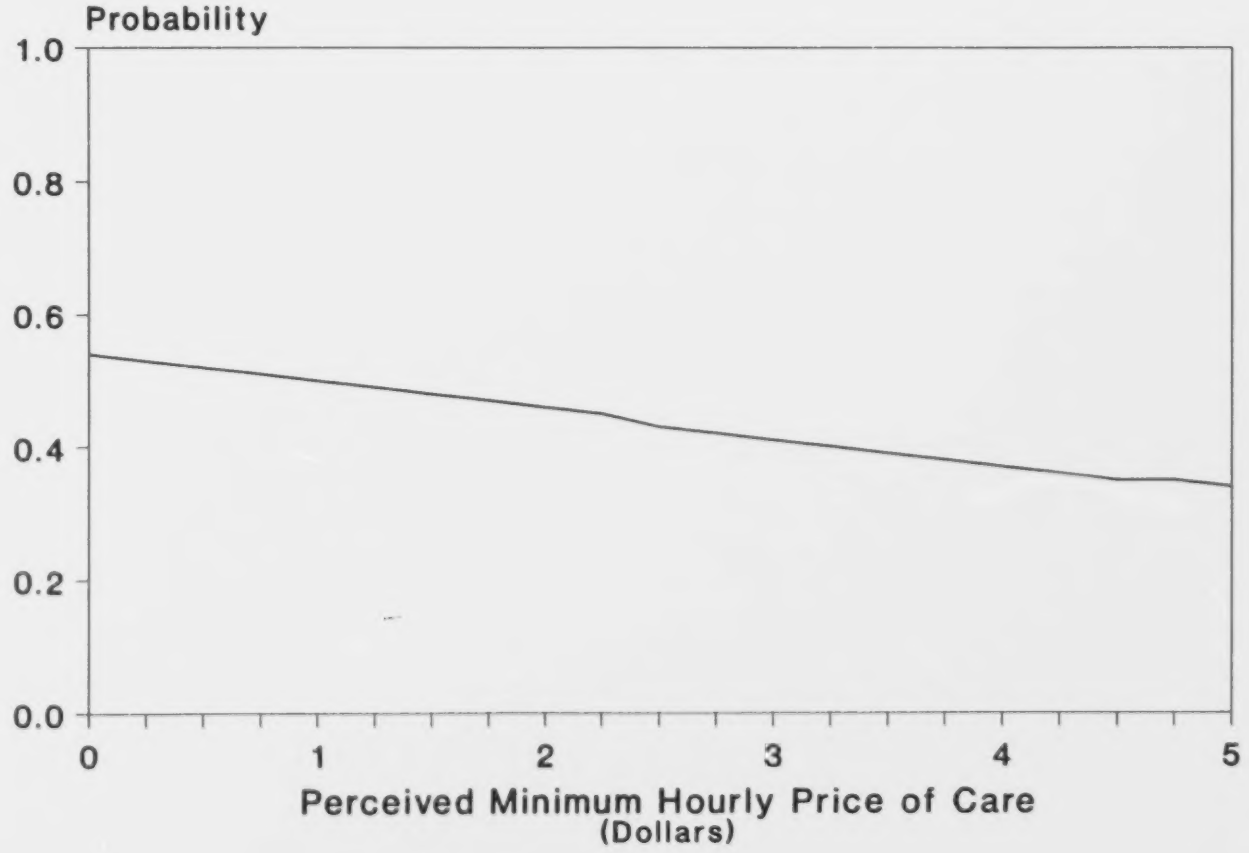
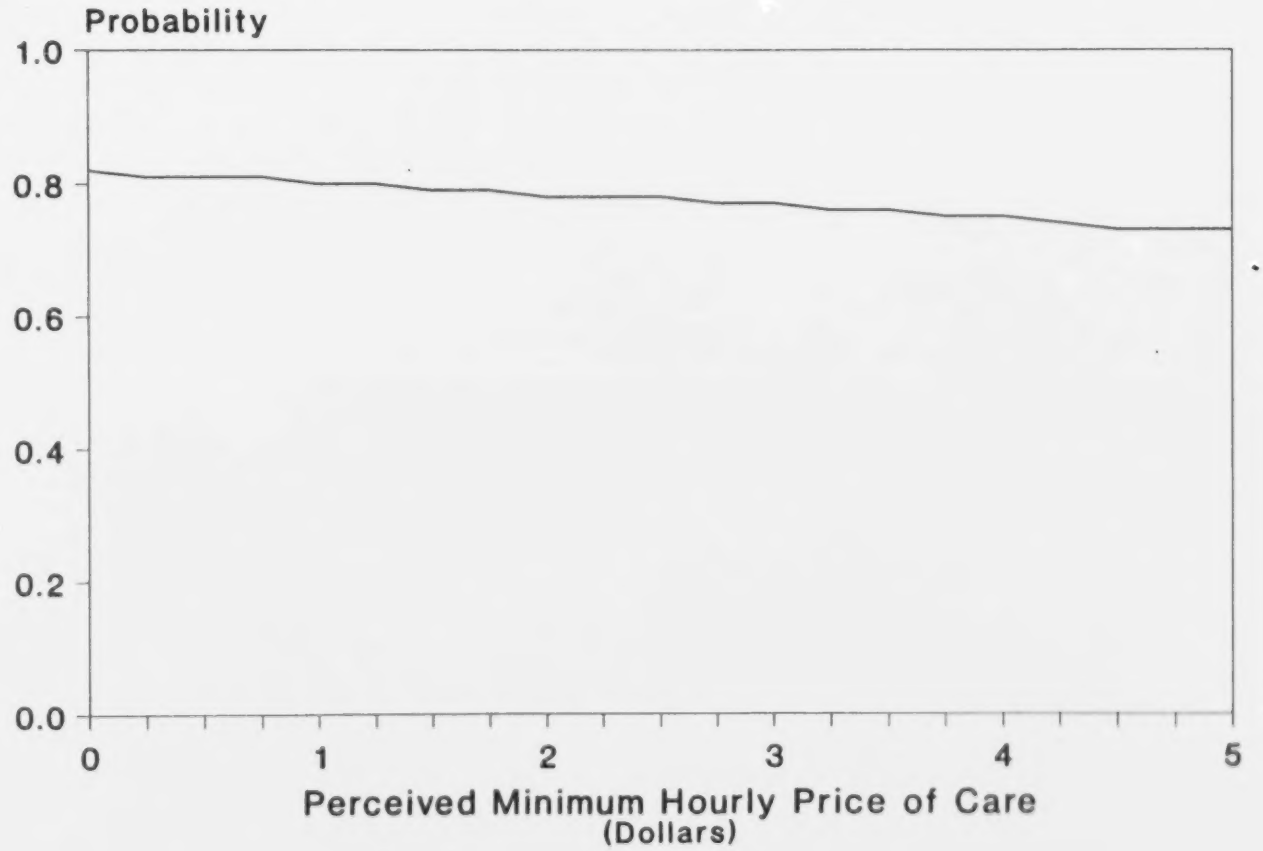


Figure 5
Probability of Employment for Mothers with Youngest Child 5 to 12



implies that after predicted parental expenditures are taken into account, teenagers limit women's employment decision.

Family characteristics. An increasing number of children under age 13 at home generally discourages maternal employment, regardless of the age of the youngest child (Tables 4 & 5). The age of the youngest child also affects women's labor supply. Women with a youngest child aged 1 to 4 are more likely to be employed than women with infants, and women with a youngest child aged 6 to 12 are more likely to be employed than women with a five-year-old.

The intersection of race/ethnicity and marital/partner status determines the likelihood of employment for mothers with a preschool-age child but not for mothers whose youngest child is aged 5 to 12 (Tables 4 & 5). Among mothers with a child under age 5, single women of color are less likely to be employed than married white women. However, there is no significant difference in employment among single white women, married women of color, and married white women.

Exogenous family income, that is, family income net of mother's earnings, negatively affects women's labor supply. As other family income increases, the likelihood of maternal employment decreases for women with younger or older children (Tables 4 & 5).

Human capital factors. Education has a positive effect on maternal employment status, regardless of the age of the youngest child (Tables 4 & 5). Although it appears that education has no effect when parental expenditures are entered into the model, education

indirectly affects women's labor supply through predicted parental expenditures (see Appendix Table A1). Thus, the effects of education are captured by predicted weekly expenditures.

Predicted wage rates have no direct effect on the likelihood of maternal employment (Tables 4 & 5). The lack of an effect may be due to the possibility that potential earnings do not drive women's employment decision once other factors are considered or to the way predicted wage rates were estimated (see Appendix Table A1).

Work experience since age 18 has a curvilinear effect on women's labor supply. As women's gain more work experience, the likelihood of employment increases until they have worked about 2 to 2.5 years and then it declines (Tables 4 & 5). This turning point probably corresponds to an interruption in employment due to child bearing and rearing.

Local social and economic conditions. Generally, the likelihood of maternal employment does not vary by metropolitan status for mothers with a preschool-age child (Table 4). However, among mothers whose youngest child is aged 5 to 12, rural women are more likely to be employed than women residing in central cities (Table 5).

Regional residence consistently affects labor force participation for mothers with a child under age 5, but not for mothers whose youngest child is of school age. Living in the southern region of the United States lowers the likelihood of maternal employment for women with younger children (Table 4). In contrast, women with school-age children living in the South, the Midwest, and the West appear to be equally likely to be employed, while

those living in the Northeast are more likely to be employed than those living in the South (Table 5).

The percentage of women in the civilian labor force in the county in 1980 exerts a positive influence on the current employment status of mothers with a child under age 5 (Table 4). Although expanding opportunities for women's employment in the county appear to stimulate the demand for women's labor, the effect of the female participation rate on the likelihood of being employed is insignificant for women whose youngest child is of school age.

The factor-based contextual scales generally do not directly affect women's current employment status. Only the minority concentration scale for women whose youngest child is of school age has a statistically significant and consistent positive effect across all equations (Table 5). Note that the negative effect of economic vitality for women with a preschool-age child disappears once the effects of both perceived price and parental expenditures are controlled (Table 4).

Predicting Women's Hourly Commitment to their Jobs

In light of the findings from the logistic regression analyses, I estimated a Tobit model of women's paid hours worked last week for mothers with a preschool-age child and for mothers whose youngest child is aged 5 to 12. This Tobit model specifies the same set of explanatory variables as the *sixth* logit equation. I chose this equation over the seventh model because of the differences in measuring perceived price. Remember that the minimum perceived price was converted to a standard hourly unit in two ways: (1) using the

assumption of 40 hours of child care a week and (2) using the current hours of care from the youngest child's primary arrangement. Since the second method of calculation uses a measure of hours of care that is endogenous to the number of hours a mother is employed, the first method creates a more appropriate measure of perceived price. The first method standardizes the cost of care using a fixed amount of time (40 hours a week) across all respondents.

To interpret the Tobit coefficients, I disaggregated the effects of the explanatory variables into two components: (1) the change in the probability that the number of hours that a woman works will be above zero and (2) the change in the number of hours that a woman works given that she is employed. I derive these component effects by setting the value of each explanatory variable to its sample mean (see McDonald and Moffitt, 1980). Tables 6 and 7 report the results of these simulations along with the Tobit coefficients, sample means, and calculation formulas.

Actual price of care. Predicted weekly expenditures have a *curvilinear* effect not only on the probability of being employed but also on the number of hours worked on a weekly basis (Tables 6 & 7). Predicted weekly expenditures increase the number of hours worked until the maximum of approximately $75 is reached ($54 for those with youngest child aged 5 to 12), and then higher expenditures negatively affect women's hourly commitment to their jobs. Figure 6 displays this curvilinear effect for mothers with a youngest child under age 5 and Figure 7 presents this effect for mothers whose youngest child is aged 5 to 12.

Table 6
Tobit Estimates, Sample Means, and Effect of Specific Factors on Probability of Working Last Week and Hours Worked for Those Working Last Week
(Mothers Whose Youngest Child is Under Age 5, N=2192)

Explanatory Variable	Tobit Coefficient (std err)	Weighted Sample Mean	Change in Probability of Working[a]	Change in Hours for Those Working[b]
Predicted weekly expenditures	1.355*** (.092)	17.303	.020	.596
Predicted weekly expenditures squared	-.009*** (.001)	639.413	-.000	-.004
Perceived minimum price/hr (based on 40hrs/wk)	-2.912*** (.724)	1.502	-.044	-1.282
Minimum price missing	-9.001** (3.111)	.055	-.135	-3.962
Presence of other adults, but no employed female	5.817 (3.108)	.041	.087	2.561
Presence of other adults with employed female	9.036* (4.433)	.018	.136	3.977
Presence of relatives available for care in area	3.984** (1.260)	.487	.060	1.754
Number of children aged 13-17 in household	-9.113*** (1.418)	.166	-.137	-4.011
Number of children under age 13 in household	-10.760*** (.829)	1.886	-.162	-4.736
Youngest child aged 1-2	5.008** (1.574)	.422	.075	2.204
Youngest child aged 3-4	4.652** (1.697)	.316	.070	2.048
Single & Black	-9.976** (3.792)	.056	-.150	-4.391
Single & Other race	-10.894* (4.925)	.028	-.164	-4.795
Single & White	-7.066* (3.304)	.079	-.106	-3.110
Married/partner & Black	6.051* (2.466)	.073	.091	2.663

Table 6 continued
Tobit Estimates, Sample Means, and Effect of Specific Factors on Probability of Working Last Week and Hours Worked for Those Working Last Week
(Mothers Whose Youngest Child is Under Age 5, N=2192)

Explanatory Variable	Tobit Coefficient (std err)	Weighted Sample Mean	Change in Probability of Working[a]	Change in Hours for Those Working[b]
Married/partner & Other race	5.178* (2.348)	.093	.078	2.279
Years of education	-.881* (.415)	13.229	-.013	-.388
Predicted hourly wage rate	.436 (.691)	3.504	.006	.192
Years of work experience	3.490*** (.319)	8.477	.052	1.536
Years of work experience squared/10	-8.506*** (1.193)	1.061	-.128	-3.744
Family income net mother's earnings (thousands)	-.504*** (.035)	28.492	-.008	-.222
Family income missing	3.568* (1.695)	.155	.054	1.571
Suburban	-2.429 (1.727)	.332	-.036	-1.069
Rural	.213 (2.496)	.243	.003	.094
Midwest	-3.161 (2.091)	.246	-.047	-1.391
Northeast	-2.140 (2.568)	.198	-.032	-.942
West	-5.638* (2.446)	.223	-.085	-2.482
Percent females in labor force	.375** (.412)	50.246	.006	.165
Economic vitality scale	-.276 (1.342)	.236	-.004	-.122
Minority concentration scale	-.506 (1.041)	.147	-.001	-.025

Table 6 continued
Tobit Estimates, Sample Means, and Effect of Specific Factors on Probability of Working Last Week and Hours Worked for Those Working Last Week
(Mothers Whose Youngest Child is Under Age 5, N=2192)

Explanatory Variable	Tobit Coefficient (std err)	Weighted Sample Mean	Change in Probability of Working[a]	Change in Hours for Those Working[b]
Population age structure scale	-1.005 (.716)	.049	-.015	-.442
Social disorganization scale	-.360 (1.073)	.122	-.005	-.158
Intercept	-1.878			
Scale parameter (sigma)	25.207			
Log likelihood	-5980.047			

*** p<.001, ** p<.01, * p<.05

[a] Obtained by multiplying the Tobit coefficient by f(z)/s, z=xb/s, where x is the vector of means of the explanatory variables, b is the vector of estimated Tobit coefficients, s is sigma or the scale parameter, and f is the standard normal density function. See McDonald and Moffitt (1980).

[b] Obtained by multiplying the Tobit coefficient by $[1-zf(z)/F(z)-f(z)^2/F(z)^2]$, where F is the standard normal cumulative distribution function. See McDonald and Moffitt (1980).

Table 7
Tobit Estimates, Sample Means, and Effect of Specific Factors on Probability of Working Last Week and Hours Worked for Those Working Last Week
(Mothers Whose Youngest Child is Aged 5 to 12, N=1686)

Explanatory Variable	Tobit Coefficient (std err)	Weighted Sample Mean	Change in Probability of Working[a]	Change in Hours for Those Working[b]
Predicted weekly expenditures	.757*** (.113)	12.366	.006	.544
Predicted weekly expenditures squared	-.007*** (.002)	330.406	-.000	-.005
Perceived minimum price/hr (based on 40hrs/wk)	-1.124* (.440)	1.379	-.009	-.808
Minimum price missing	-7.608*** (2.053)	.092	-.061	-5.468
Presence of other adults, but no employed female	-1.695 (2.226)	.069	-.014	1.218
Presence of other adults with employed female	2.020 (3.287)	.029	.016	1.452
Presence of relatives available for care in area	.902 (1.127)	.496	.007	.649
Number of children aged 13-17 in household	-4.194*** (.863)	.518	-.034	-3.015
Number of children under age 13 in household	-5.236*** (.983)	1.542	-.042	-3.763
Youngest child aged 6-9	5.516*** (1.651)	.559	.044	3.965
Youngest child aged 10-12	6.912*** (1.961)	.288	.056	4.968
Single & Black	-.897 (2.958)	.079	-.007	-.645
Single & Other race	9.983* (4.718)	.022	.080	7.716
Single & White	-3.044 (2.544)	.115	-.024	-2.188
Married/partner & Black	1.084 (2.542)	.052	.009	.779

Table 7 continued
Tobit Estimates, Sample Means, and Effect of Specific Factors on Probability of Working Last Week and Hours Worked for Those Working Last Week
(Mothers Whose Youngest Child is Aged 5 to 12, N=1686)

Explanatory Variable	Tobit Coefficient (std err)	Weighted Sample Mean	Change in Probability of Working[a]	Change in Hours for Those Working[b]
Married/partner & Other race	4.272 (2.211)	.080	.034	3.071
Years of education	.793 (.426)	13.223	.006	.570
Predicted hourly wage rate	-.528 (.663)	3.875	-.004	-.379
Years of work experience	3.267*** (.262)	11.888	.026	2.348
Years of work experience squared/10	-6.799*** (.818)	1.921	-.055	-4.887
Family income net mother's earnings (thousands)	-.308*** (.208)	28.359	.002	-.222
Family income missing	.850 (1.543)	.156	.007	.611
Suburban	1.972 (1.555)	.362	.016	1.418
Rural	5.493* (2.148)	.286	.044	3.948
Midwest	-3.224 (1.902)	.249	-.026	-2.318
Northeast	3.452 (2.265)	.196	.028	2.482
West	-.973 (2.208)	.192	-.008	-.699
Percent females in labor force	-.019 (.120)	49.958	-.000	-.014
Economic vitality scale	2.096 (1.085)	.140	.017	1.506
Minority concentration scale	2.508** (.948)	.113	.020	1.803

Table 7 continued
Tobit Estimates, Sample Means, and Effect of Specific Factors on Probability of Working Last Week and Hours Worked for Those Working Last Week
(Mothers Whose Youngest Child is Aged 5 to 12, N=1686)

Explanatory Variable	Tobit Coefficient (std err)	Weighted Sample Mean	Change in Probability of Working[a]	Change in Hours for Those Working[b]
Population age structure scale	-.185 (.647)	.060	-.001	-.133
Social disorganization scale	.195 (.907)	.083	.002	.140
Intercept	-7.769			
Scale parameter (sigma)	21.114			
Log likelihood	-5706.524			

*** p<.001, ** p<.01, * p<.05

[a] Obtained by multiplying the Tobit coefficient by f(z)/s, z=xb/s, where x is the vector of means of the explanatory variables, b is the vector of estimated Tobit coefficients, s is sigma or the scale parameter, and f is the standard normal density function. See McDonald and Moffitt (1980).

[b] Obtained by multiplying the Tobit coefficient by $[1-zf(z)/F(z)-f(z)^2/F(z)^2]$, where F is the standard normal cumulative distribution function. See McDonald and Moffitt (1980).

Figure 6
Predicted Hours of Paid Work for Mothers with Youngest Child Under 5

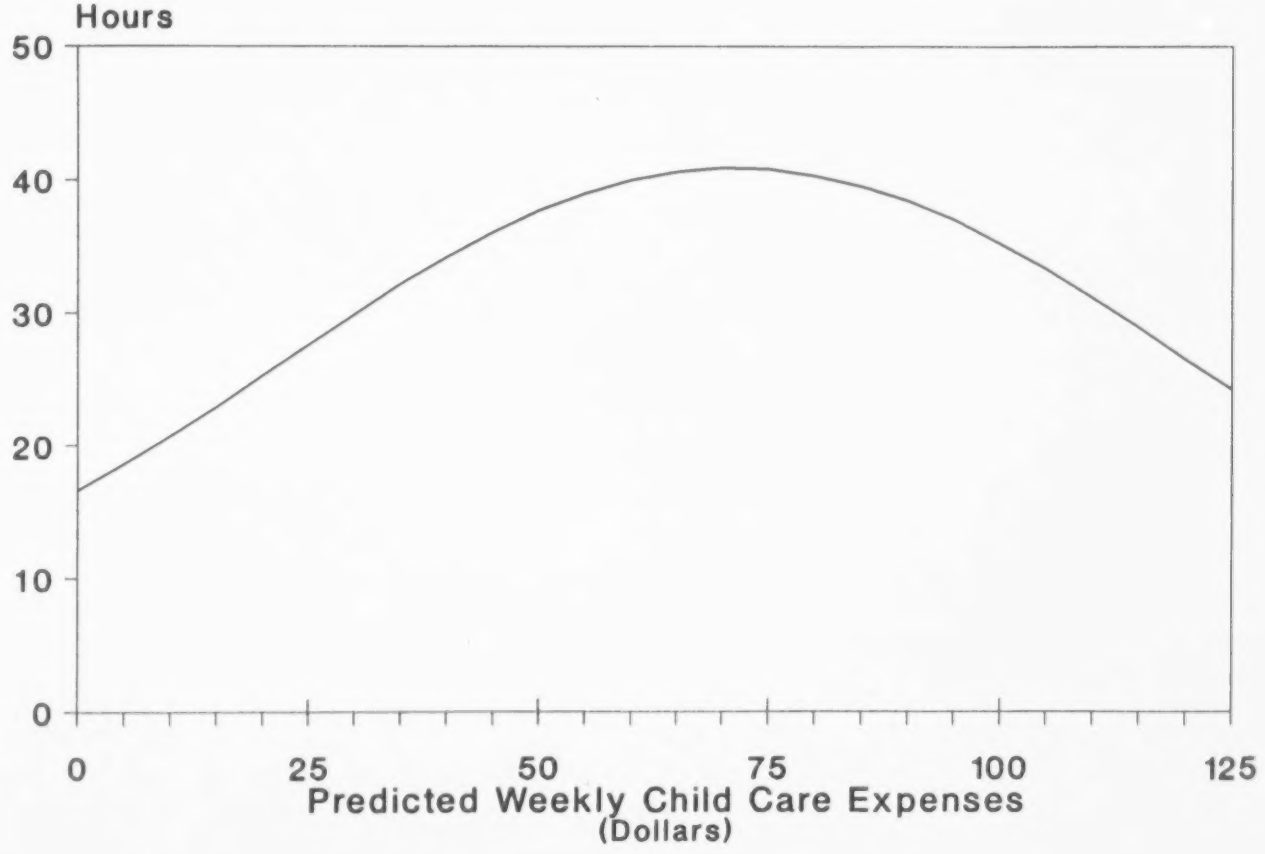
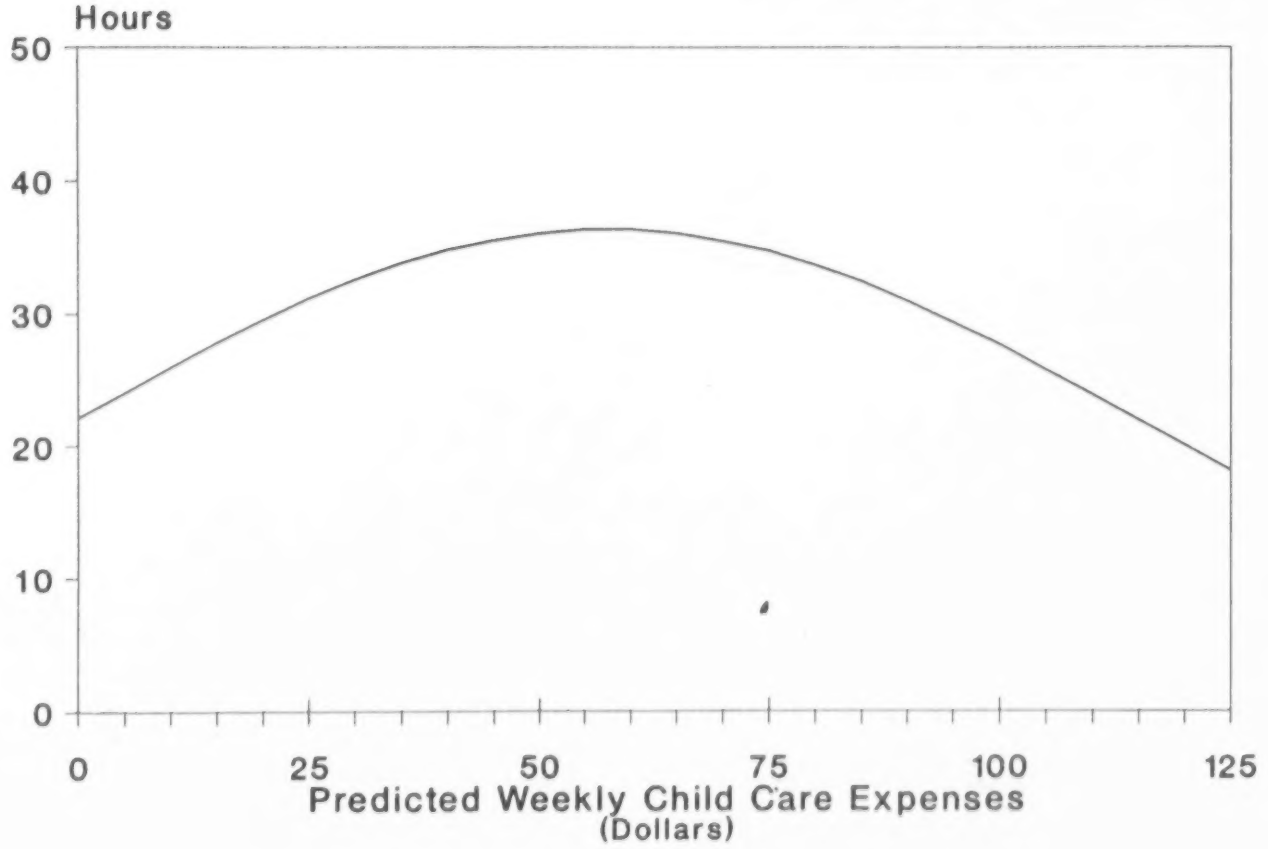


Figure 7
Predicted Hours of Paid Work for Mothers with Youngest Child 5 to 12



Although the results are not shown here, I also estimated the effects of local hourly fees on hours in paid work, with and without controlling for women's perceptions of price. Neither center fees nor family day care fees significantly affect women's time spent at their jobs.

Perceived price of care. Women's perception of price affects the amount of time they spend working for wages, regardless of their predicted weekly expenditures. As the minimum price of care increases, the number of hours that they work *decreases* (Figures 8 & 9). A one-dollar increase in the perceived hourly price decreases women's weekly work effort by a little over one hour for mothers with a preschool-age child and by just under one hour for mothers whose youngest child is aged 5 to 12 (Tables 6 & 7).

Availability of relatives. Given that they are employed, women with a preschool-age child who live with another adult female who happens to be employed work about 4 hours more a week than women who do not have any other nonparental adult living at home (Table 6). The presence of other adults does not independently affect the hourly work effort of women whose youngest child is aged 5 to 12 (Table 7).

Among women with a child under age 5, those who have a relative available for providing care in the local area work almost 2 hours more each week compared to those without an available relative (Table 6). In contrast, the availability of relatives does not significantly affect the number of hours worked by women whose youngest is aged 5 to 12 (Table 7).

Figure 8
Predicted Hours of Paid Work for Mothers with Youngest Child Under 5

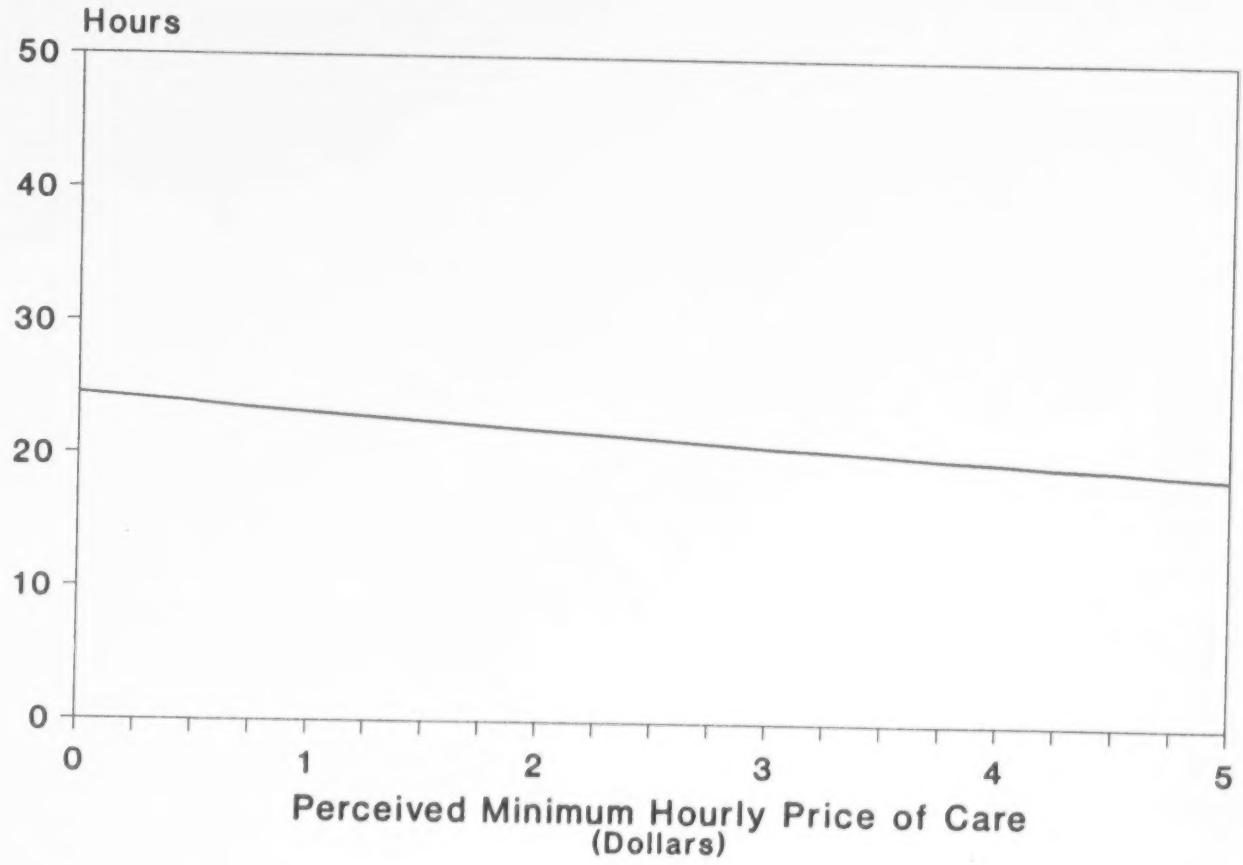
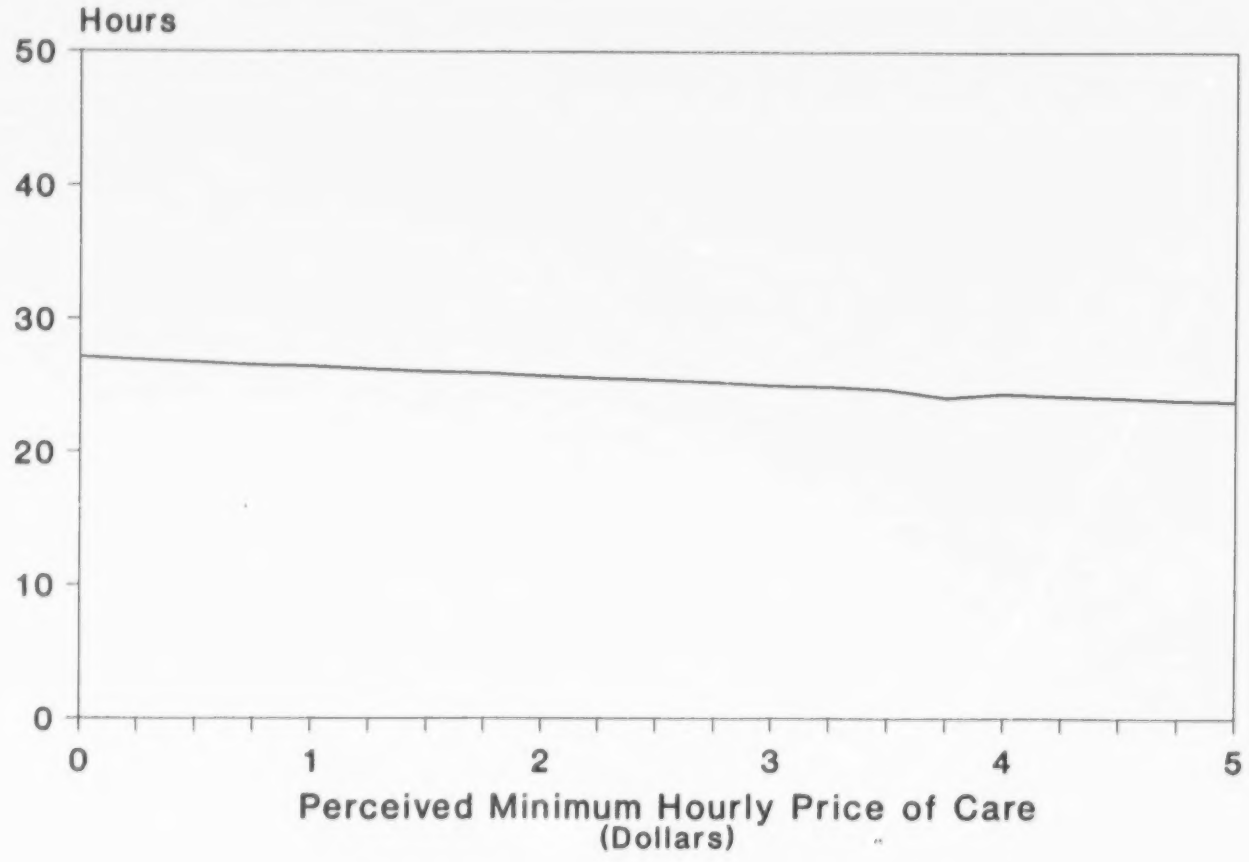


Figure 9
Predicted Hours of Paid Work for Mothers with Youngest Child 5 to 12



Teenagers limit women's hourly commitment to their jobs, regardless of the age of the youngest child. Each child aged 13 to 17 at home decreases the number of hours a woman works by about 4 for those whose youngest is under age 5 and by about 3 for those whose youngest child is of school age (Tables 6 & 7).

Family characteristics. Likewise, as the number of children under age 13 increases, the number of hours women are employed decreases. Each child under age 13 decreases women's employment effort by almost 5 hours for mothers with a child under age 5 and by almost 4 hours for mothers whose youngest child is aged 5 to 12 (Tables 6 & 7).

However, women whose youngest child is aged 1 to 4 work about 2 hours more a week than women who have an infant, all else being equal (Table 6). Women with a youngest child aged 6 to 9 work about 4 hours more and women with a youngest child aged 10 to 12 work about 5 hours more than women whose youngest child is five years old (Table 7).

Given that they are employed, single women with a child under age 5 of all races/ethnicities work 3 to 5 hours less per week than white counterparts who are married or who live with a partner (Table 6). Yet married women of color with a preschool-age child work over 2 hours more per week than married, white women. However, there are few differences in hourly commitment to jobs based on the intersection of race/ethnicity and marital/partner status among women whose youngest child is aged 5 to 12. The only statistically significant effect is that single mothers of other races (e.g., Hispanic or Asian) work almost 8 hours more per week than their white counterparts who are married (Table 7).

Family income net of mother's earnings negatively influences women's hourly commitment to their jobs. For mothers of both preschool and school-age children, every $10,000 in exogenous annual income subtracts about 2 hours of paid work each week (Tables 6 & 7).

Human capital factors. Interestingly, education appears to exert a negative effect on women's work effort among those with a preschool-age child (Table 6). On the other hand, education has no significant effect on paid hours at work for mothers whose youngest child is aged 5 to 12. Likewise, expected wage rates do not independently affect women's time spent in paid work. Because these effects, or lack of effects, are counter intuitive, further investigation is warranted. As was the case with the logistic regressions, the inclusion of predicted parental expenditures may nullify the effects of education and expected wage rates.

Nevertheless, work experience since age 18 does independently affect women's hourly employment in a curvilinear fashion. As women grow more experienced in the labor market, their hourly commitment to their jobs increases at first, but after approximately 2 years their number of hours in paid work declines. Because work experience is highly correlated with age, these effects may be partly due to either maturation or cohort differences.

Local social and economic conditions. In general, women's hourly commitment to their jobs is not directly affected by local social and economic conditions with only few exceptions. Rural women whose youngest child is aged 5 to 12 work typically about 4 hours more per week than their counterparts in central cities. Women living in the West who have a child under age 5 work about 2 and a half hours less per week than their counterparts

living in the South. The percentage of females in the civilian labor force augments women's time spent in paid work if they have a preschool-age child, and the minority concentration scale positively affects the amount of time mothers of school-age children spend in paid work.

VI. Conclusions

Child care is a central U.S. workforce issue in the 1990s because of the rapid expansion of women with young children in the labor force and the growing number of single mothers (see U.S. Department of Labor, 1988). At the same time, a rising demand for workers with increased technological skills has encouraged many women to attain higher levels of education and training to enhance their job opportunities. In light of these recent trends, policy makers are seeking ways to assist both working women and potential workers in balancing their work and family obligations. By understanding how child care affects women's employment, government agencies such as the Women's Bureau can help develop efficient mechanisms for promoting the welfare of women workers and facilitating women's opportunities for employment.

Toward this elusive goal, this report provides information on how child care costs serve as a barrier to women's employment. This study compares the effects of four dimensions of child care costs on women's employment: (1) the market price of care that parents face within a local area; (2) parental expenditures on child care; (3) women's perceptions of the minimum price of substitute care; and (4) the availability of potentially "free" caregivers. Data for the empirical analyses come from two recent nationally representative surveys -- the National Child Care Survey 1990 and A Profile of Child Care Settings Study -- in conjunction with a contextual file of county-level information.

Logistic regression and Tobit analyses reveal that the effects of actual price of care on the likelihood of maternal employment and on the number of hours women spend in paid

work vary by the *definition* of price. First, the fees charged by centers and regulated family day care providers do *not* directly affect women's employment decisions. This does not necessarily mean that women's labor supply is insensitive to the fees charged by nonregulated providers, but that it may be sensitive to the measurement of price.

Second, parental expenditures independently affect women's current employment status and their hourly commitment to their jobs in a *curvilinear* fashion. As predicted weekly expenditures rise, both the likelihood of employment and women's hourly work effort increase initially, but then decline after a maximum dollar amount is experienced. For women with a preschool-age child the maximum point is about $74-77 a week, and for women whose youngest child is aged 5 to 12 the maximum point is about $50-54 a week.

In contrast, the perceived minimum price of care *negatively* affects women's labor supply in terms of both their current employment status and the number of hours spent at their jobs, even after controlling for the effects of actual price. The likelihood of employment and women's hourly commitment to their jobs decrease as women's perception of the minimum hourly price increases. Thus, women's perceptions about the price of child care are powerful determinants of their labor force participation.

Lastly, the analyses show that the availability of relatives in the local area and the presence of an "extra" employed female encourages maternal employment for mothers of young children. However, teenagers living at home do not serve as a pool of potentially "free" caregivers for younger siblings in that the presence of teenagers limits women's labor

supply. Older children seem to shift women's priorities away from market work to family work.

These findings suggest that we can reduce the obstacles posed by child care costs in multiple ways. First, financial assistance for child care or pricing policies placing a cap on parental expenditures would diminish the negative effects of actual price on women's labor supply at higher levels of expenditures. Also, efforts to increase women's earnings may compensate for the detrimental impact of higher parental expenditures. Second, how women *perceive* the price of care matters. Their perceptions may be a more accurate reflection of the true minimum price that they face than fees charged by regulated providers or predicted expenditures. If so, then public or private child care subsidies or grants in conjunction with optimal earnings are reasonable policy objectives. On the other hand, if women's perceptions of price are not truly reflective of their potential expenditures, educational campaigns sponsored by local governments and resource and referral agencies about local child care options may lessen the negative impact of women's price perceptions on their employment decisions. Information about all aspects of child care is essential to good decision making.

Future research can assist policy makers in evaluating the priorities of these various policy options. First, scholars should continue to explore alternative specifications of price in general and parental expenditures in particular. Consistent findings based on multiple definitions of price using different data sources contribute to our knowledge about women's labor supply. Specifically, further analyses need to disentangle the direct and indirect effects of education, wage rates, and predicted expenditures on women's labor supply. Finally,

research could evaluate policy options by simulating how subsidies and other pricing policies would affect women's labor force participation.

VII. Appendices

Table A1 details the complete two-equation Tobit model of predicted weekly expenditures. The Tobit model adjusts for the probability of using supplemental care in estimating weekly expenditures.

Table A2 presents the complete two-stage OLS regression of women's logged hourly wage rate for single mothers and for mothers who are married or living with a partner. The wage equations correct for the likelihood of having wage information or being employed in estimating positive wages.

Table A1
Joint Maximum Likelihood Estimates of Probit for Supplemental Care and Selectivity-Corrected Tobit for Weekly Expenditures

Explanatory Variables	Supplemental Care		Weekly Expenditures	
	b	se	b	se
Black	-.23*	.12		
Hispanic	-.08	.11		
Other nonwhite	-.16	.24		
Single	.11	.11		
Age of youngest child	.03***	.01	-1.76**	.59
Number of children under age 18 at home	.25***	.03	28.41***	1.47
Center care as primary arrangement	2.55***	.20	85.33***	5.22
Family day care as primary arrangement	2.59***	.28	88.29***	6.38
In-home care as primary arrangement	2.08***	.39	91.46***	8.85
Relative care as primary arrangement	2.46***	.22	51.60***	6.12
Lessons as primary arrangement	2.13***	.29	54.46***	6.85
Other care as primary arrangement	.70***	.17	26.40**	10.03
Years of education	.12***	.01	4.29***	.73
Family income net of mother's earnings/1,000	.00*	.00	.31***	.06
Income missing	.04	.08	-11.60**	4.26
Suburban	-.04	.08	-1.02	3.48
Rural	-.08	.08	-2.30	4.12
Midwest	.14	.08		
Northeast	.17	.09		
West	-.01	.09		
Weight variable	.02	.07	-5.68	3.66
Sigma			66.97	3.66
Intercept	-2.14		-191.01	
Sample size	3516		2813	
Rho	.691			
Log likelihood	-8144.557			

*** $p < .001$; ** $p < .01$; * $p < .05$

Table A2
Two-stage OLS estimates of Probit for non-zero wages and Selectivity-Corrected Regression for Log Hourly Wages for Single and Married Mothers

Explanatory Variables	Single Mothers		Married Mothers	
	Non-Zero Wages	Log Wage	Non-Zero Wages	Log Wage
Black	-.20 (.13)	.08 (.09)	.30 (.16)	.06 (.12)
Hispanic	-.20 (.19)	.16 (.13)	-.10 (.13)	-.07 (.11)
Other nonwhite	.07 (.07)	-.20 (.16)	-.13 (.29)	-.05* (.22)
Age of youngest child	.03 (.02)	-	.28** (.01)	-
Number of children under age 18 at home	-.14** (.05)	-	-.07* (.03)	-
Years of education	.26 (.20)	-.20 (.16)	.14 (.16)	-.18 (.13)
Years of education squared	-.66 (.79)	1.03 (.59)	-.49 (.57)	1.18* (.48)
Years of work experience since age 18	.13*** (.02)	-.00 (.03)	.15*** (.01)	.08* (.03)
Years of work experience squared	-.28*** (.07)	-.00 (.06)	-.36*** (.05)	-.14* (.09)
Suburban	-.17 (.13)	-.09 (.08)	.05 (.08)	-.06 (.06)
Rural	-.02 (.14)	-.44** (.08)	.05 (.08)	-.23** (.06)
Midwest	-.39** (.14)	-.03 (.11)	.01 (.08)	-.05 (.06)
Northeast	-.13 (.15)	.13 (.09)	-.18 (.09)	.10 (.76)
West	-.51** (.16)	.28* (.12)	-.01 (.10)	.04 (.07)
Weight variable	-.06 (.10)	-.12* (.06)	.08 (.08)	-.06 (.07)
Lambda		-.56		.45
Intercept	-2.32	2.76	-2.10	.70
Sample size	673	367	1650	813
Rho squared	.614		.346	
Log likelihood	-.324.307		-834.446	

*** $p < .001$; ** $p < .01$; * $p < .05$

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Data from *The National Child Care Survey 1990* and *A Profile of Child Care Settings* may be ordered from Dr. J.J. Card, Sociometrics Corporation, 170 State Street, Suite 260, Los Altos, CA 94022, 415-949-3282.